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SENIOR DISSERTATION BEFORE COMPLETION OF THE DEGREE OF MULTILINGUAL BACHELOR ON BUSINESS AND INTERNATIONAL RELATIONS

ANALYSIS OF THE INFLUENCE OF TAIWAN'S ECONOMIC MODEL (1953-1983) IN THE PLANNING OF THE NATIONAL STRATEGY FOR THE CHANGE OF THE ECUADORIAN PRODUCTIVE MATRIX (2015-2017) FROM AN ECONOMIC GROWTH PERSPECTIVE

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DEDICATION

To God, my biggest strength.

To my mother Mónica and my father Jaime, who are the ones that always encouraged me to follow my dreams and accomplish new goals.

To all my family for their endless love and support.

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To God, who always guides my way, my dreams and makes me a better person.

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II. ABSTRACT

Due to its structural dependence on primary resources and therefore, to a situation of unequal exchange, the Ecuadorian economy has been subordinated to external factors such as global competition that has stagnated its economic development. However, from a global perspective, despite these conditions, economic growth has been evidenced in countries as vulnerable as Ecuador just as it was Taiwan before the adoption of policies aimed at industrialization as a strategy to generate economic growth. In this regard, given the economic and social effect noticeable in Taiwan's economic and social indicators in the period 1953-1983, this research analyzed the influence that this model has had in the planning of the National Strategy for the Change of the Ecuadorian Productive Matrix (2015-2017) as a way to generate economic growth, and by the way to provide a better quality of life for all its inhabitants.

Thus, the main findings were that in an environment of very high dependence, and hence, of vulnerability related to economic cycles due to a subordination to a productive specialization based on a primary-export structure; industrialization and innovation appear as the path towards development, being the State's involvement crucial in this process. In addition, on the basis of the Modernization Theory in accordance with the theory of economic development of Rostow, and on the other hand, on the Latin American Classical Structuralism Theory in accordance with Raúl Prebisch, a comparative analysis between

these economic plans was carried out, being possible to identify several similarities in the approach of their policies geared towards productive transformation, as well as some differences with regard to their implementation. Finally, descriptive statistics were used to contextualize economic aspects such as growth and vulnerability, as well as social aspects related to the quality of life of the inhabitants.

Keywords: Structural dependence on primary resources, Unequal exchange, Global competition, Industrialization, National Strategy for the Change of the Ecuadorian Productive Matrix, Development and economic growth, Modernization, Latin American Classical Structuralism, Economic plans, Economic vulnerability.

III. RESUMEN

La economía ecuatoriana se ha visto supeditada a factores externos como la competencia global debido a su dependencia estructural en recursos primarios y en consecuencia a un intercambio desigual que han estancado paralelamente su desarrollo económico. Sin embargo, desde una perspectiva global se ha evidenciado crecimiento económico en países igualmente vulnerables como lo fue Taiwán, antes de la adopción de políticas encaminadas hacia la industrialización como estrategia para generar crecimiento económico. En este sentido, dado el efecto económico y social perceptible en los indicadores económicos y sociales de Taiwán en el periodo 1953-1983, se analizó la influencia de este modelo en la planificación de la Estrategia Nacional para el Cambio de la Matriz Productiva ecuatoriana (2015-2017) a fin de generar crecimiento económico y en consecuencia, mejorar la calidad de vida de sus habitantes.

Así, entre los principales hallazgos se evidencia que en un entorno de alta dependencia, y por lo tanto de vulnerabilidad relacionada a los ciclos económicos a causa de la subordinación a una especialización productiva basada en una estructura de exportación primaria; la industrialización y la innovación aparecen como la solución para alcanzar el

desarrollo, siendo la participación del Estado crucial en el proceso. Además, con base en la teoría de la Modernización desde Rostow y de la teoría del Estructuralismo Latinoamericano según Raúl Prebisch, se llevó a cabo un análisis comparativo entre estos planes económicos siendo posible resaltar las similitudes en términos del enfoque guiado hacia la transformación productiva y diferencias en cuanto a la implementación. Finalmente, se hizo uso de la estadística descriptiva para contextualizar aspectos económicos como crecimiento y vulnerabilidad, así como también aspectos sociales relacionados con la calidad de vida de los habitantes.

Palabras clave: Competencia global, Intercambio desigual, Dependencia estructural en recursos primarios, Estrategia Nacional para el Cambio de la Matriz Productiva, Desarrollo y crecimiento económico, Industrialización, Modernización, Estructuralismo Latinoamericano, Planes económicos, Vulnerabilidad económica.

IV. RÉSUMÉ

L'économie de l'Équateur a été subordonnée aux facteurs externes tels que la concurrence mondiale en raison de sa dépendance structurelle à l'égard des ressources primaires et par conséquent aux échanges commerciaux inégaux qui ont stagné le développement économique. Toutefois, d'un point de vue global, malgré toutes ces conditions, la croissance économique a été mise en évidence dans les pays également vulnérables, notamment Taiwan avant l'adoption de politiques en faveur de l'industrialisation comme stratégie pour générer la croissance économique. À cet égard, compte tenue de l'effet économique et social perceptible dans les indicateurs économiques et sociaux de Taiwan dans la période 1953-1983, le présent travail de recherche a analysé l'influence que ce modèle économique a eu sur la planification de la Stratégie Nationale pour le Changement de la Matrice Productive de l'Équateur (2015-2017) au profit de la croissance économique et par conséquent, d'une meilleure qualité de vie pour tous ses habitants.

Ainsi, parmi les principales conclusions ce qui apparaît c'est que dans un environnement de très forte dépendance et, partant, de vulnérabilité liée aux cycles économiques à cause d'une subordination à une spécialisation productive basée sur une structure d'exportation primaire; l'industrialisation et l'innovation, semblent être la voie du développement, constituant la participation de l'Etat, crucial dans le processus. De plus, sur la base de la théorie de la Modernisation conformément â la théorie du développement économique de Rostow et, d'autre part, de la théorie du Structuralisme latino-américaine selon Raúl Prebisch, une analyse comparative entre les deux plans économiques a été réalisée, où il était possible d'identifier plusieurs similitudes dans l'approche de leurs politiques orientées vers une transformation productive, ainsi que certaines différences quant à leur mise en œuvre. Finalement, des statistiques descriptives ont été utilisées pour contextualiser les questions économiques tels que la croissance et la vulnérabilité, ainsi que des aspects sociaux liés à la qualité de vie des habitants.

Mots-clés: Concurrence mondiale, Dépendance structurelle à l'égard des ressources primaires, Échanges commerciaux inégaux, la Stratégie Nationale pour le Changement de la Matrice Productive de l'Équateur, Développement et croissance économique, Industrialisation, Modernisation, Structuralisme latino-américaine, Plans économiques, Vulnérabilité économique.

V. INTRODUCTION

This dissertation relies on a comparative analysis between two economies, that of Taiwan (1953-1983) and that of Ecuador (2015-2017) respectively, which have experienced the need to adopt measures in order to generate economic growth; it considers the need and importance of developing an economic model capable of removing Ecuador from its vulnerability to external factors such as global competition, by means of implementing similar strategies as the ones implemented by successful models such as that of Taiwan, that could guide Ecuador towards the transition from an economy based on primary resources and above all on oil, to an economy based on knowledge. This will allow by the way to generate a greater national understanding regarding the main objective of the National Strategy for the Change of the Ecuadorian Productive Matrix in accordance with Ecuador's current economic situation.

Therefore, for the analysis of the National Strategy for the Change of the Productive Matrix, the research will consider the period 2015-2017, since it is in 2015 that emphasis is placed on its development in order to reduce trade inequality among countries (FES-ILDIS, 2016, p. 6). With reference to the macroeconomic policy implemented in Taiwan, the study will consider the period 1953 to 1983, because since 1953 a macroeconomic policy accompanied by a set of measures aimed at promoting Taiwan's development by means of the creation of export industries was introduced; so that by 1983 the impact of trade exchange was measurable in its economy.

Concerning the space, the study considers Ecuador and the Island of Taiwan as economic actors, for having been in the case of Taiwan and being, in the case of Ecuador, economies vulnerable to a system of competition, where the road towards industrialization strives to be the solution for the benefit of the economy.

On this basis, the working hypothesis for this research seeks to prove whether or not within the framework of economic vulnerability, the macroeconomic policy of Taiwan aimed at the development of export industries in the period 1953-1983 influenced the planning of the Change of the Ecuadorian Productive Matrix as a national strategy to generate economic growth in the period 2015-2017. Hence, its overall objective aims to analyze the influence of the macroeconomic policy of Taiwan aimed at the development of export industries (1953-1983) in the planning of the National Strategy for the Change of the Ecuadorian Productive Matrix in the period 2015-2017, from an economic growth perspective.

To this end a comparative analysis was carried out based on two theoretical frameworks, on the one hand, the Modernization Theory in accordance with the theory of economic development of Rostow that was used to explain the economic model applied by Taiwan in 1953-1983. On the other hand, the Latin American Classical Structuralism Theory, which in accordance with Raúl Prebisch places industrialization as the basis for the structural changes that are necessary at the forefront of both underdevelopment and the main economic problems suffered by the countries of Latin America region, including Ecuador. Thus, in both theories, the State becomes responsible for the process of industrialization, meaning that it must carry out "changes in traditional tasks, the functioning of political institutions, the productivity of the private sector and the formulation and implementation of public policies in different areas" (Vargas, 2008, p. 114) to reduce the economic stagnation in these countries, and by the way to provide a better quality of life for all its inhabitants.

In this way, the research was divided into three parts. The first chapter considers a period before the adoption of economic strategies, so by means of economic indicators in conjunction with descriptive statistics it analyzes the similarities and differences between Taiwan and Ecuador in terms of economic vulnerability. This is backed up by three main topics which are underdevelopment, industrialization and production levels, and individuals'

living conditions. Thus, the economic indicators that were taken into account for both, Ecuador and Taiwan, in order to demonstrate this vulnerability first of all in terms of underdevelopment were Gross Domestic Product (GDP), Population Growth Rate and World Income distribution. Then, in terms of industrialization and production levels, indicators such as productive sectors, level of investment and the contribution of the productive sectors to the GDP were used. Finally, in terms of individuals' living conditions, indicators such as Human Development Index (HDI), levels of poverty and Gini Coefficient were considered. Therefore, this chapter is crucial for understanding the economic policies that were later on implemented in both, Taiwan and Ecuador, by their respective governments.

Chapter 2 analyzes the policies applied by Taiwan within the framework of its macroeconomic policy aimed at the development of export industries that contributed to its economic growth in the period 1953-1983 as well as to place it as a successful model to follow. For this, according to the theoretical framework, the three main policies that were taken into the account were the following; policies to promote industrialization and innovation, policies to promote inclusion and policies to promote savings and investment. These policies were backed up by descriptive statistics that demonstrate the economic and social impact of their implementation.

Finally, in chapter 3 it's possible to compare and contrast the involvement of the governments of Chiang Kai-Shek (Taiwan) and Rafael Correa (Ecuador) in the promotion of industrialization, innovation, inclusion, savings and investment as policies to cope a system of competition and the effects of exogenous shocks to which traditional societies are exposed. In this regard, it has been possible to highlight similarities in terms of the approach that has been geared towards research, development, productive transformation and diversification, as some differences in terms of policy implementation.

Based on this, through descriptive statistics in line with the comparative analysis, the methodology will allow to initially demonstrate quantitatively the conditions of economic vulnerability of both Taiwan and Ecuador before the adoption of economic strategies measured by means of their economic indicators. It will subsequently allow to demonstrate qualitatively and quantitatively the economic and social effects of the strategies implemented by Taiwan in the period 1953-1983 and then, to relate qualitatively the policies of the strategies that were adopted within the framework of the macroeconomic policy aimed at the development of export industries applied by Taiwan in 1953-1983 and of the National Strategy for the Change of the Ecuadorian Productive Matrix in 2015-2017. Finally, on the basis of this comparison it will allow to find the path to Ecuador's economic growth.

It's worth mentioning that the topic is relevant at national level because by means of the comparison with other economies that have implemented successful strategies for economic development, such as the case of Taiwan that during 1953-1983 through the implementation of a macroeconomic policy fostered by the Government of Chiang Kai-Shek and aimed at promoting development (Bekerman, Sirlin & Streb, 1995, p. 55), managed to grow the Gross National Product (GNP) to an annual average of 8.6% per year (Bekerman & Sirlin, 1997), as well as an increase of 79% in its commercial indicators (Kuznets, 1988) and an increase of 20% to 40% in the participation of the industrial sector (Bekerman & Sirlin, 1997), enabling Taiwan's transition from an agricultural and poor island to a leading economic power in the manufacture of high-tech products (Santander Trade Portal, 2017).

Thus, this case allows us to broaden the national perspective regarding the need to develop a model of economic development capable of removing Ecuador from its vulnerability at the forefront of external factors such as a global competition that was reflected at the end of 2014 with the fall in the Price of oil provoked by an oversupply of the

main partners of the Organization of the Petroleum Exporting Countries (OPEP) (El Universo, 2015, p.1.).

Finally, the raised issue relates to the major in “Multilingüe en Negocios y Relaciones Internacionales” due to its holistic approach, as it’s a study that is not conditioned to a national context, but that from a global view and through comparison allows to understand similar situations of vulnerability that have overcome this condition, as the case of Taiwan. In this way, it’s a study that involves issues of trade and economic policy as the basis to carry out the comparison and the approach of solutions for the benefit of economic development.

CHAPTER 1 ECONOMIC VULNERABILITY IN TAIWAN AND ECUADOR BEFORE THE ADOPTION OF STRATEGIES AIMED AT GENERATING ECONOMIC DEVELOPMENT

"If the past has nothing to say to the present, history may go on sleeping undisturbed in the closet where the system keeps its old disguises"[1]

Eduardo Galeano 1992

1.1. Underdevelopment of Taiwan and Ecuador before the adoption of economic strategies reflected in economic indicators.

Taiwan and Ecuador, have been characterized for being traditional societies in terms of its dependency on primary products and its lack of industrialization that have consequently stagnated their economies, provoked unequal exchange, inhibiting them from reaching a proper degree of development. Moreover, throughout their histories they have faced different challenges such as global competition, higher population growth in comparison with developed countries, among other issues that will be described in detail in order to explain underdevelopment as a condition of economic vulnerability that has by the way made it more difficult to improve individuals living conditions.

Thus, by means of the comparison between different economic indicators in conjunction with descriptive statistics, this sub-chapter analyzes the conditions of economic vulnerability that have been identified as a common fact between Ecuador and Taiwan before the adoption of economic strategies and that are crucial for understanding the economic policies that were later on implemented in both, Taiwan and Ecuador, by their respective governments.

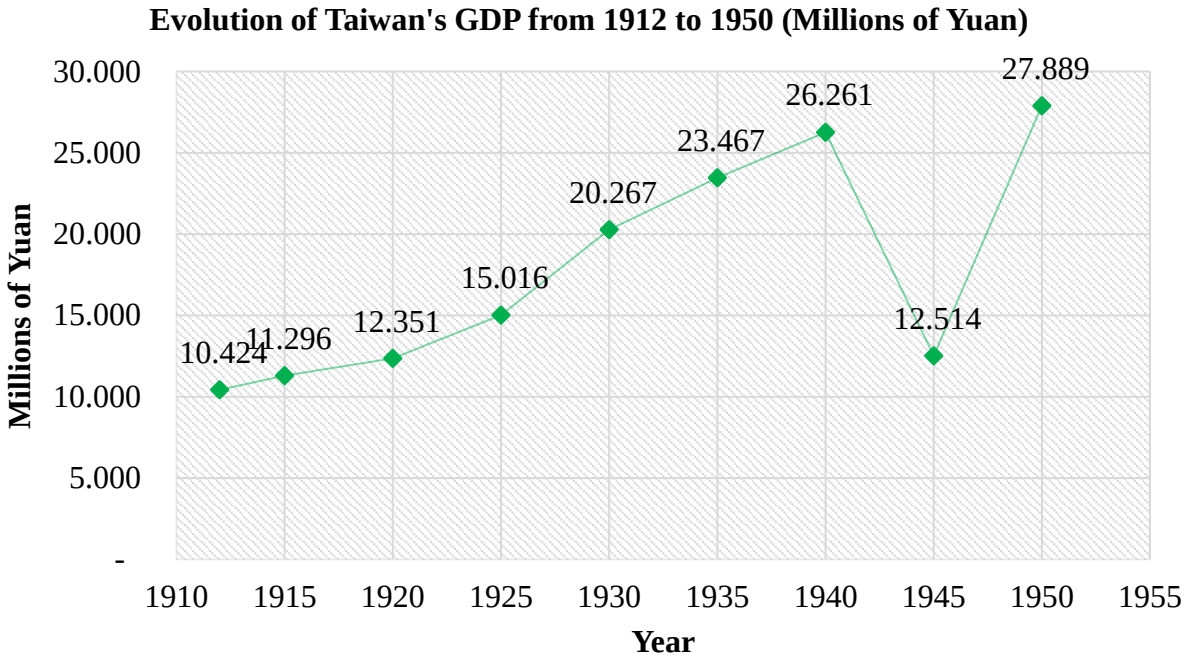
[1] Phrase from Eduardo Galeano, Uruguayan journalist, novelist and writer whose works served to illuminate history and politics of Latin America.

1.1.1. Gross Domestic Product (GDP) of Taiwan and Ecuador before the adoption of economic strategies.

Before the adoption of economic strategies, Taiwan and Ecuador, were subordinated to a productive specialization based on a primary-export structure that led both economies to face an increasingly wider global competition (Vásquez, 2017), stagnating its economic development and by the way, positioning them in a condition of economic vulnerability. This economic vulnerability is intended to be demonstrated first in terms of their GDP before the adoption of economic strategies aimed at generating development and economic growth[2]. Hence, the analysis will consider real GDP as a way to measure the economic growth that Taiwan experienced since 1912 until 1950, and Ecuador since 2006 until 2016.

GRAPHIC 1.

Evolution of Taiwan's GDP from 1912 to 1950 (Millions of Yuan).



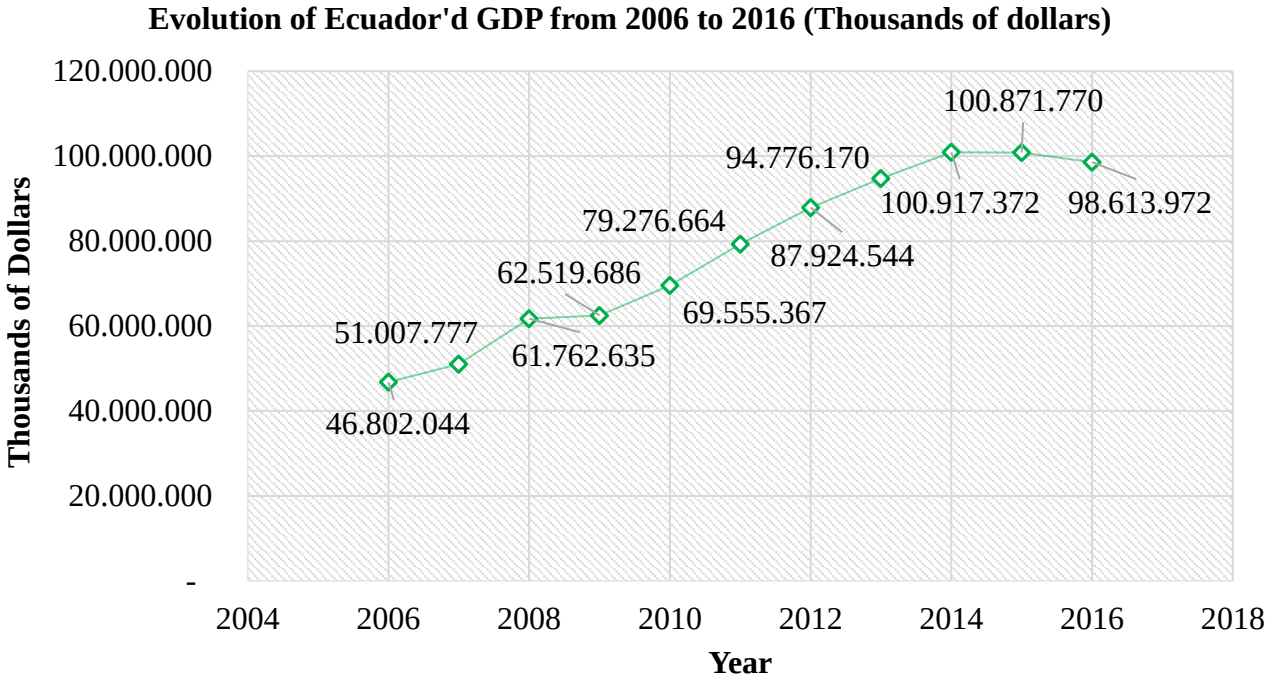
Source: Mizoguchi, 1999

Elaborated by: Andrea P. Gómez Yánez

[2] The growth rate varies in accordance to the reference year.

GRAPHIC 2.

Evolution of Ecuador's GDP from 2006 to 2016 (Thousands of dollars).



Source: Banco Central del Ecuador, 2017

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First of all, for the analysis of statistical data, it's important to emphasize that according to the COE Project regarding Taiwan, "pre 1950 there is very little statistical material available, none in systematic fashion, some of them kept secret under wartime policy, while other data was lost as a consequence of social and economic turbulence" (Mizoguchi, 1999, p. 115).

Now, according to Runde (2015) Taiwan's "GDP placed it among the least developed countries in the world" and among poor market economies. This can be explained because, historically, aborigine inhabitants practiced agriculture as an activity for subsistence (Economic History Association, n.d., p.1), as in Ecuador.

This is confirmed when analyzing their statistical data; since 1912 Taiwan's real GDP evidenced a slight growth ranging from 1,82% in the period 1912-1920 to 31,15% in the

period 1945-1950. With an average annual growth of 2,62% in the period 1912-1950. Likewise, according to the data submitted by "Banco Central del Ecuador" (2017), since 2006 it's possible to evidence the effects of raw materials, such as oil on the Ecuadorian economy. That means, that between 2006 and 2014 high oil prices had a positive impact on the economy by evidencing an average GDP growth of 5,18% during this period. In addition, this was also a consequence of important external financing flows to the public sector that together with high oil prices facilitated a greater public spending, as well as investment in energy and transport sectors (Banco Mundial, 2017).

However, after a slight growth both experienced a decline. With regard to Taiwan, due to the chaos of the 1940s it experienced a sharp decline of -24,19% in its real GDP growth, which implied that its economy "stagnated from early postwar period up until the mid-1960s" (Hsiao, F., Hsiao, M., 2017, p. 185). This stagnation can be explained because by the second half of 1930, agriculture as an activity of subsistence reached its limit, meaning that there was no more arable land. By 1945, even if the effects of war on its agriculture were minimal in comparison with other industries, its economy was significantly affected in conjunction with the loss of human lives (Life of Taiwan, 2012-2018). In addition, the Chinese Civil War (1945-1949) led Taiwan to chaos and extreme poverty (Hsiao, F. & Hsiao, M., n,d.,p.17).

In Ecuador, its economic vulnerability at the forefront of external factors such as global competition was evidenced at the end of 2014 with the fall in the price of oil provoked by an oversupply of the main partners of the Organization of the Petroleum Exporting Countries (OPEP) (El Universo, 2015, p.1.) with a negative impact for the economy because even if there was an increase of 5,7% with respect to 2013 in the production of oil, that is from 114,9 to 158 million barrels per year, the income obtained by this increase did not prevent a decrease in profits and hence a contraction of oil revenues (Miranda, 2016, p. 11-

12). This can be explained because investment rates in Ecuador have been far below their own needs both quantitatively and qualitatively, where the majority of Foreign Direct Investment has been made in a single industry, the oil industry, so the qualitative effects of the FDI in terms of technology, exports or linkages have been very limited (Tapia, 2011, p. 89).

Considering the respective periods of study for both economies, after those crises, while Ecuador´s economy began to contract, by 1950 Taiwan could recover in a quickly way because under Japanese colonialism, modern economic and social development was encouraged by means of the "technical know-how, new skills, human capital, and a whole set of social and economic infrastructure" that Japanese left in 1945 (Hsiao, F. & Hsiao, M., n,d.,p.17), so that by 1950 the Island already had a developed agricultural sector that produced different agricultural products in large quantities preventing it by the way from suffering a collapse (Hsiao, F. & Hsiao, M., n,d.,p.7-15).

Even though, in both cases, this strong reliance on primary goods affected the development of their economies by positioning them "in a situation of unequal exchange subject to the vagaries of the world market" (SENPLADES, 2012); moreover, Taiwan's subordination and exploitation to Japanese powers (Aseniero, 1994, p.282) implied by the way, a heavy reliance on trade with Japan, placing it in a "vulnerable position with regard to fluctuations in the world economy" (Li, 1976, p.177).

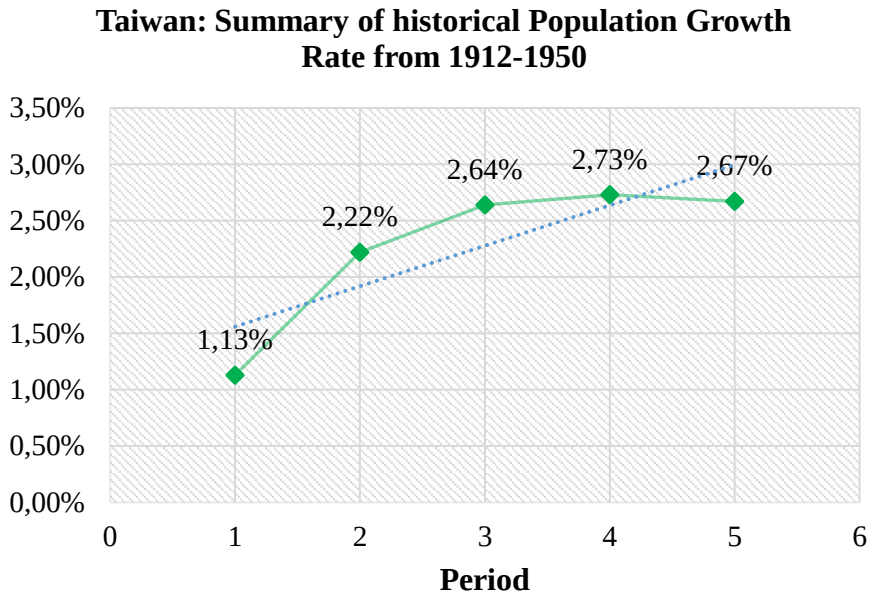
1.1.2. Population Growth Rate of Taiwan and Ecuador before the adoption of economic strategies.

According to Li (1976) from 1920 to 1951, Taiwan's population growth pattern has been characterized by a birth rate weighing between 4% and 5% and a decreasing death-rate weighing from 3% down to 1%. Regarding the agricultural population which comprised 63% of the total population, since 1911 it has multiplied 3,5 times while total population has

multiplied 6 times. With reference to Ecuador, according to the last census taken in 2010, the population accounted 0,2% of the World and 2,0% of Latin America, with a population density of 52 people per km2 resembling the second most populous country in Latin America (INEC, 2012).

GRAPHIC 3.

Taiwan: Summary of historical Population Growth Rate from 1912 to 1950.



Period	Year	Population
1	1912-1920	1,13%
2	1920-1930	2,22%
3	1930-1940	2,64%
4	1940-1945	2,73%
5	1945-1950	2,67%

Source: Mizoguchi, 1999

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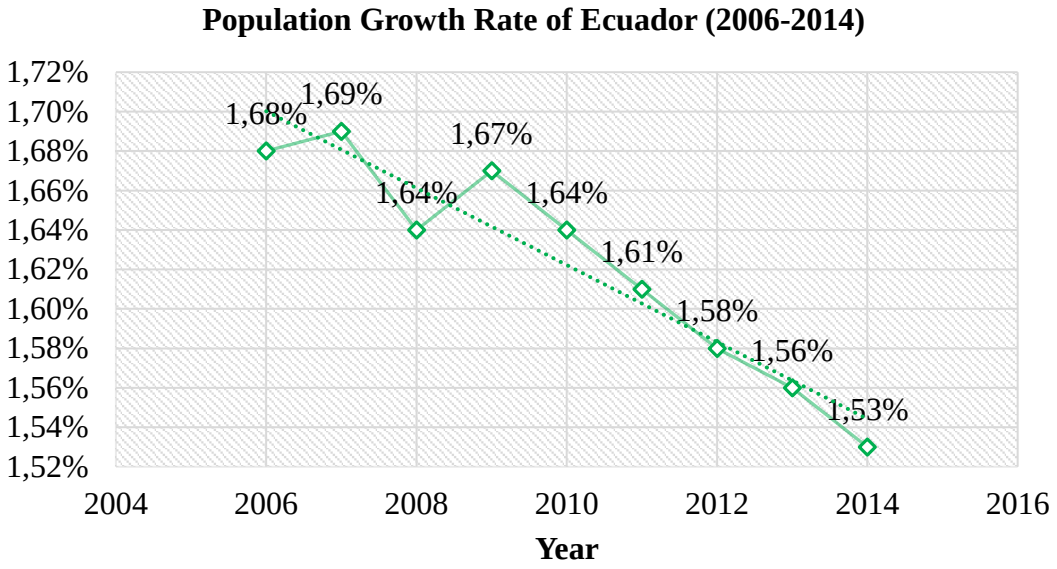
GRAPHIC 4.

Population Growth Rate of Ecuador from 2006 to 2014.



Source: Banco Mundial, 2017

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When analyzing Taiwan's statistical data presented above, there's evidence of a constant growth between 1912 until 1945 where the population growth rate start to decrease. In this way, on the one hand, population growth can be explained due to a combination of factors such as decreasing death rates as stated before, high fertility rates, the influx of immigrants such as soldiers and civilians after the Chinese Civil War that came from Mainland China (Deaton, & Paxson, 1994, p.333). Also, the overpopulation and land shortages in Mainland China that encouraged people to immigrate to Taiwan, the wave of immigration of Japanese people, as well as of refugees that came from all over China (Ying-jeou, 2007, p.1). Therefore, due to high population growth it became more difficult to improve individuals living conditions. On the other hand, since 1945 the rapidly decline of population can be explained due to the effects of war, mainly the Second World War and the Chinese Civil War that resulted in the loss of human lives (Life of Taiwan, 2012-2018), and

also because after the end of the Second World War the birth rate began to decline (Chen, K., Wang, T., Chen, W., 1986).

On the other hand, when looking at the historical evolution of population growth in Ecuador, there's evidence that it has been decreasing, or, more specifically it keeps growing but slowly, due to improvements in health, a steep drop in the fertility rate because traditional activities of Ecuadorian women have been changing, that is, they spend more time studying, and working than having children (Albornoz, 2011, p.1), also because there has been a decrease in death rates, in the number of homes as well as the decision of having fewer children which is related to the educational attainment of the parents. In accordance to the census, in 2010 the average number of children per household was 1,6, which decreased in relation to 2001, from 1,8; and from 2,3 in 1990 (INEC, 2012).

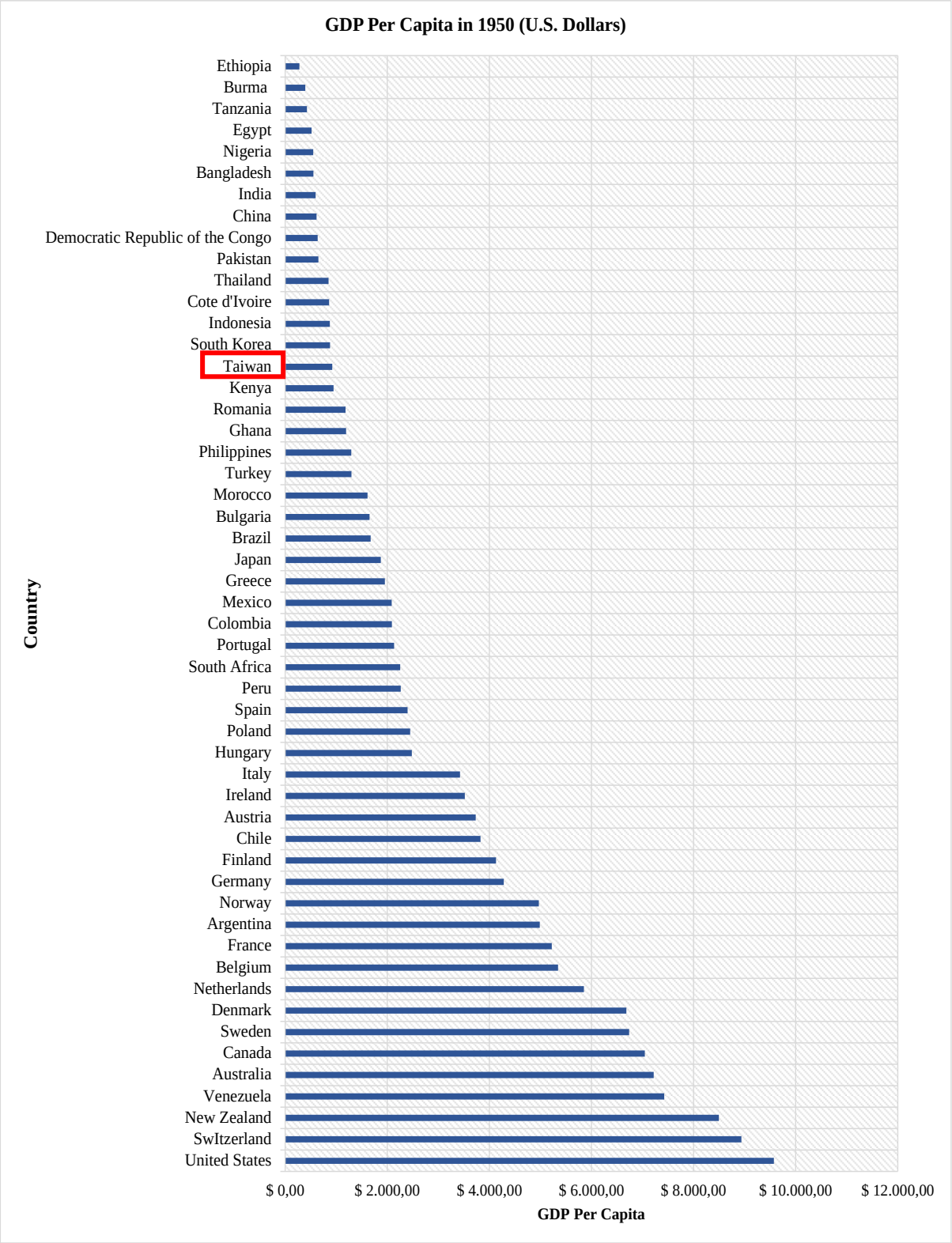
In this respect it's worth mentioning that within the country, different trends of population growth have been identified; in quantitative terms there is evidence that, as in Taiwan, at the provincial level there was more dynamic growth than in urban areas (INEC, 2012). But even if there has been a decrease in the population growth, in relation to developed countries whose demographic growth is very low, around 0,2% on average, Ecuador remains threatened by it as a condition that characterizes underdevelopment (Ibáñez, 2009, p.1), because according to the Theory of population of Thomas Malthus (1998), when there's an increase in population, there's a need for more resources and therefore an increase in the probabilities of famines, which can lead to an overexploitation of fields, to the destruction of forests, to emigration, and to a greater demand for social services, housing and jobs that may impoverish the country (Camarasa, 2010,p. 1). Hence, in both cases it has been demonstrated that population growth is higher related to the improvement of individuals living conditions and therefore to economic development.

1.1.3. World Income Distribution in Taiwan and Ecuador before the adoption of economic strategies.

In terms of world income distribution, before the adoption of economic strategies both economies ranked among the last positions. This is because, on the one hand, Taiwan as a colony was characterized for being an Island composed of farmers with an economic development based on agriculture, but not in the most appropriate conditions, due to its geography that positioned it as one of the most mountainous islands in the world. As a consequence, it was small in land with limited resources where just a quarter of its land was suitable for the development of agriculture (Hsiao, F., &, Hsiao, M, n,d., p. 12-15).

On the other hand, throughout its history Ecuador's economy, which was belatedly introduced to the dynamics of capitalism (Castro, 2007, p.1), has been characterized for being small, highly dependent on international trade mainly because it's a country that fulfills its role as a supplier of raw materials. In addition, it's worth mentioning that its economy has been also characterized for being strongly inequitable (Banco Central del Ecuador, 2010, p. 3), "large informal and for its poorly qualified workforce" (Coface, 2018).

GRAPHIC 5. *World Income Distribution in 1950 (U.S. Dollars).*



Source: Nation Master, 2011

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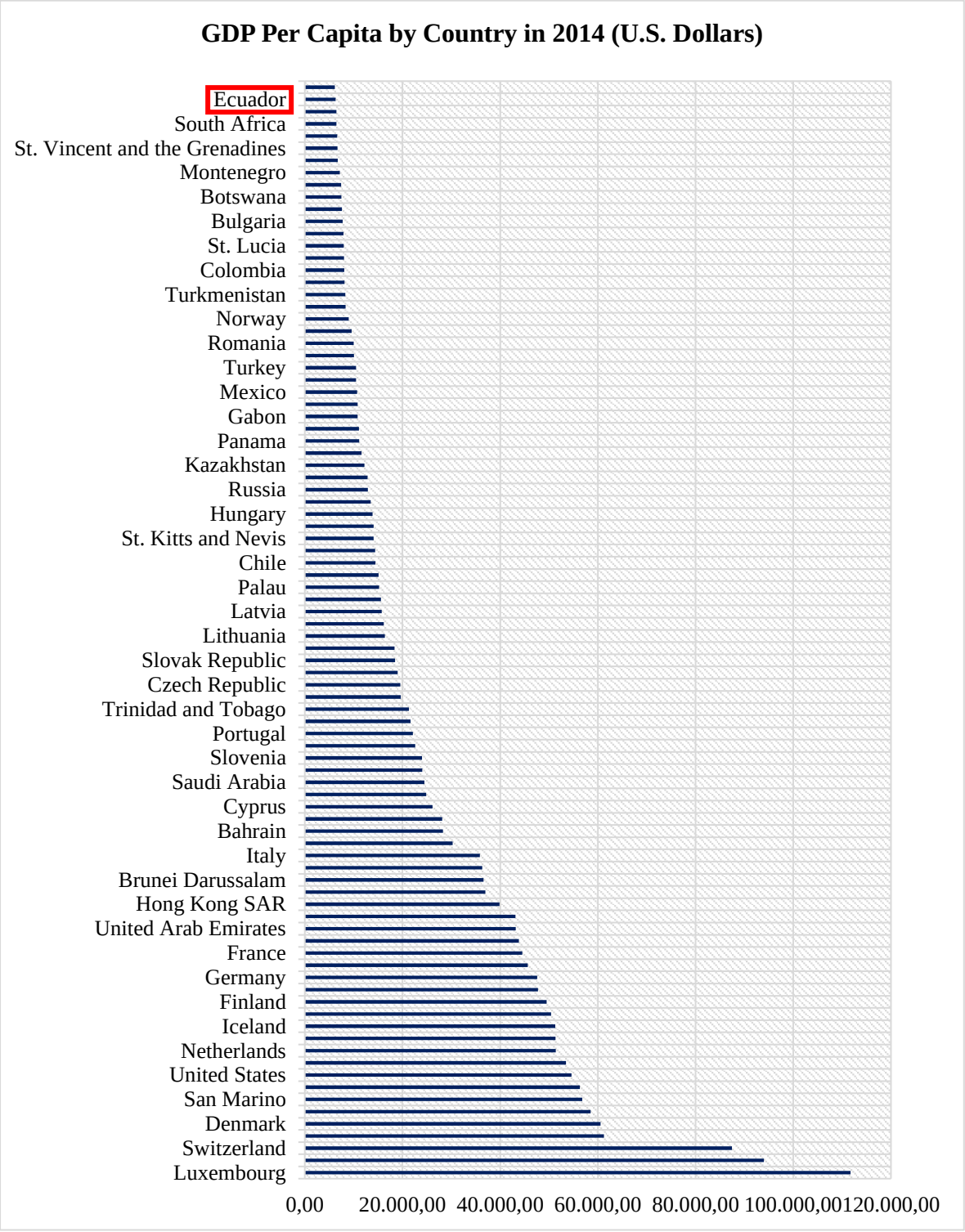
GRAPHIC 6. World Income Distribution in 2014 (U.S. Dollars).



Source: International Monetary Fund, 2015

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Now, even if the comparative advantage of Taiwan relied on its subtropical location that enabled it to produce quite different crops of which the Japanese were able to intelligently take advantage by means of intensive research which included irrigation, agricultural and biological innovation, and organized institutions to develop and transform this economic sector into an advanced agricultural sector (Hsiao, F., &, Hsiao, M, n,d., p. 12-15); in terms of wealth distribution, in 1950 with a GDP Per Capita of $922.00 Taiwan ranked 38th out of 58 countries (Graphic 5), while the United States due to an industrialization process that was carried out between 1880 and 1929 (Rees, 2016, p. 1-3), with a GDP Per Capita of $9,573.00 (Nation Master, 2011) ranked first. Showing that an economy based on agriculture, such as the one of Taiwan, wasn't enough for reaching a proper degree of economic development, wealth and economic stability (United Nations, 2007, p. 265).

With regard to Ecuador, considering that it fulfills its role as a supplier of raw materials, its dynamism has been characterized by a series of cyclical booms influenced by the increased exports of primary goods such as cocoa in 1866-1925, banana in 1946-1968 and oil since 1972 until today (Banco Central del Ecuador, 2010, p.3). In terms of wealth distribution in 2014 with a GDP Per Capita of $6.286,425, Ecuador ranked 89th out of 187 countries (Graphic 6), in comparison to Luxembourg that ranked first with a GDP Per Capita of $ 111.716,268 and to the United States that ranked ninth with a GDP Per Capita of $ 54.596,653 (International Monetary Fund, 2015).

Demonstrating once again, that economies that have been characterized for being industrialized, with "modern infrastructures, excellent market connectivity, attractive institutional, legislative and fiscal framework" as evidenced in Luxembourg (The Official Portal of the Grand Duchy of Luxembourg, 2017, p.1), and for having "a strong industrial and agricultural production, a large and well-developed service industry, as well as extremely

high rates of research, innovation, and capital investment" (EW World Economy Team, 2013, p. 1) in the case of the United States, have helped them to reach a proper degree of development, wealth and economic stability (United Nations, 2007, p. 265).

1.2. Industrialization and production levels in Taiwan and Ecuador before the adoption of economic strategies.

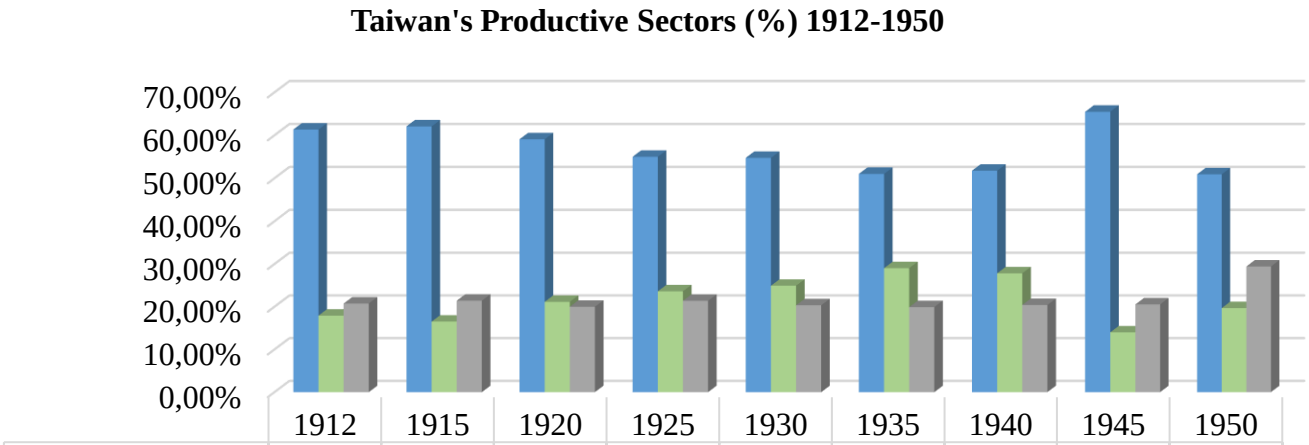
For the development and growth of the economy, according to Rostow it's necessary that the values of a society as well as its modes of production be aligned to a greater propensity to save and invest. Therefore, in this subchapter economic vulnerability as a consequence of underdevelopment, has been measured in terms of the levels of industrialization and production in Taiwan and in Ecuador by analyzing their three productive sectors, which are the primary sector that includes activities such as the extraction and harvesting of the raw materials; the secondary sector that entails the transformation of raw materials for the production of goods and the tertiary sector that is principally engaged in the production of services. This analysis has been accompanied by the levels of investment that have been destined to their economies and the contribution of their productive sectors to their GDP.

1.2.1. Productive sectors in Taiwan and Ecuador before the adoption of economic strategies.

The following graphics show the main productive sectors of Taiwan and Ecuador in their respective periods of study.

GRAPHIC 7.

Taiwan's Productive Sectors in the period 1912-1950 (%).



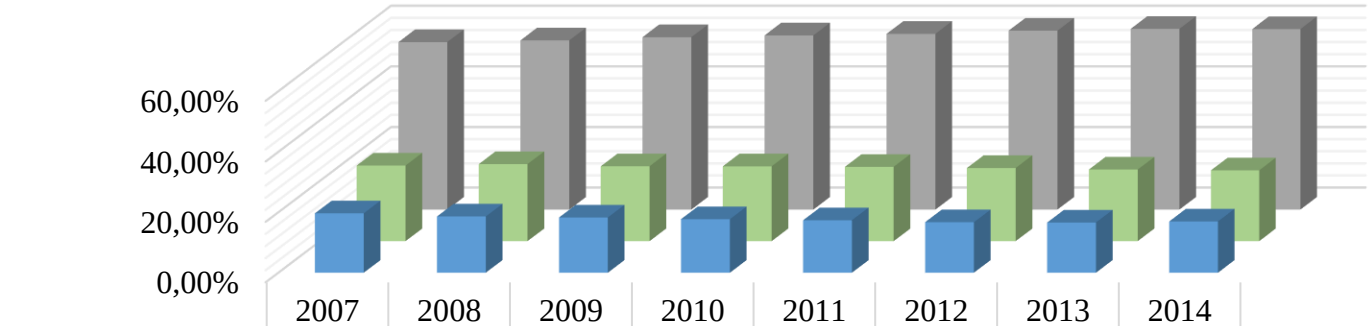
	1912	1915	1920	1925	1930	1935	1940	1945	1950
Primary Sector	61,33%	62,07%	59,07%	55,00%	54,74%	51,01%	51,76%	65,47%	50,91%
Secondary Sector	17,92%	16,52%	21,15%	23,61%	24,91%	29,03%	27,83%	13,99%	19,68%
Tertiary Sector	20,75%	21,41%	20,00%	21,38%	20,34%	19,91%	20,41%	20,54%	29,41%

Source: Mizoguchi, 1999

Elaborated by: Andrea P. Gómez Yánez

GRAPHIC 8.

Ecuador's Productive Sectors in the period 2007-2014 (%).



	2007	2008	2009	2010	2011	2012	2013	2014
Primary Sector	19,67%	18,62%	18,28%	17,72%	17,37%	16,72%	16,62%	16,97%
Secondary Sector	25,04%	25,51%	24,79%	24,77%	24,60%	24,22%	23,71%	23,44%
Tertiary Sector	55,29%	55,87%	56,92%	57,50%	58,03%	59,07%	59,67%	59,59%

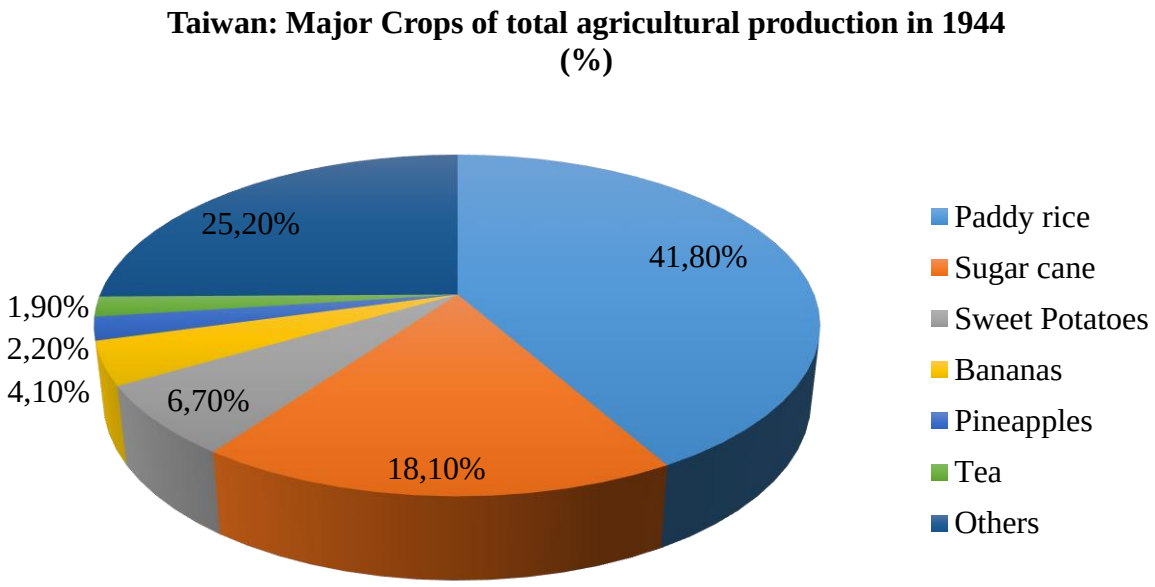
Source: Banco Central del Ecuador

Elaborated by: Andrea P. Gómez Yánez

With reference to Taiwan, as evidenced above, before the adoption of economic strategies Taiwan was characterized by a predominant primary sector, that is, an agricultural economy that despite its natural disadvantages, with the assistance of the Japanese could take advantage of its subtropical location (comparative advantage) enabling it to produce different crops (Hsiao, F., Hsiao, M., n.d, p.12). That means that before the Japanese occupation, Taiwan had small-scale operations (Economic History Association, n.d.). But with the assistance of the Japanese, by 1944, Taiwan already had "96 field crops which included paddy rice (41,8%), sugar cane (18,1%), sweet potatoes (6,7%), bananas (4,1%), pineapples (2,2%) and tea (1,9%)" (Hsiao, F., Hsiao, M., n.d, p.12) as the main major crops (Chart 1).

CHART 1.

Taiwan´s major crops of total agricultural production in 1944 (%).



Source: Hsiao, F., Hsiao, M., n.d.

Elaborated by: Andrea P. Gómez Yánez

Throughout time, all the crops increased so that by 1930 they reached their maximum production, with the exception of tea. Between 1930 and 1938, Taiwan exported almost half of its agricultural production (Economic History Association, n.d., p.1.). Even though, before

1953 the secondary and tertiary sectors were weak because industry foundation was weak. That means that its economy wasn't yet concentrated neither in industrial nor in services development, by that time it was just entering into the first phase of economic development, which was the labor-intensive textile-industry (Dong, 2015, p.34-47).

Regarding Ecuador, the Ecuadorian economy presents a more detailed breakdown of its different productive sectors which according to Banco Central del Ecuador (2014) are the ones presented in Chart 2. Graphic 8, shows that unlike Taiwan, Ecuador's main economic activity is concentrated in the tertiary sector which is principally engaged in the production of services, followed by the secondary sector which entails the transformation of raw materials for the production of goods and finally in the primary sector which includes activities such as the extraction and harvesting of the raw materials.

CHART 2.

Breakdown of Ecuador's productive sectors.

Primary Industry:	A. Agriculture, forestry and fisheries B. Mining and quarrying
Secondary Industry:	C. Manufacturing Industries
Tertiary Industry:	D. Generation, transmission and distribution of electrical power E. Collection, purification and distribution of water; and sanitation F. Construction G. Wholesale and retail trade H. Transport and storage I. Accommodation and food services J. Communications and information K. Financial and insurance activities L. Real estate activities M. Professional, technical and administrative activities N. Public administration and defense; and compulsory social security O. Education P. Social services related to Human Health Q. Entertainment, recreation and other service activities

	R. Private households with domestic service

Source: Banco Central del Ecuador, 2014

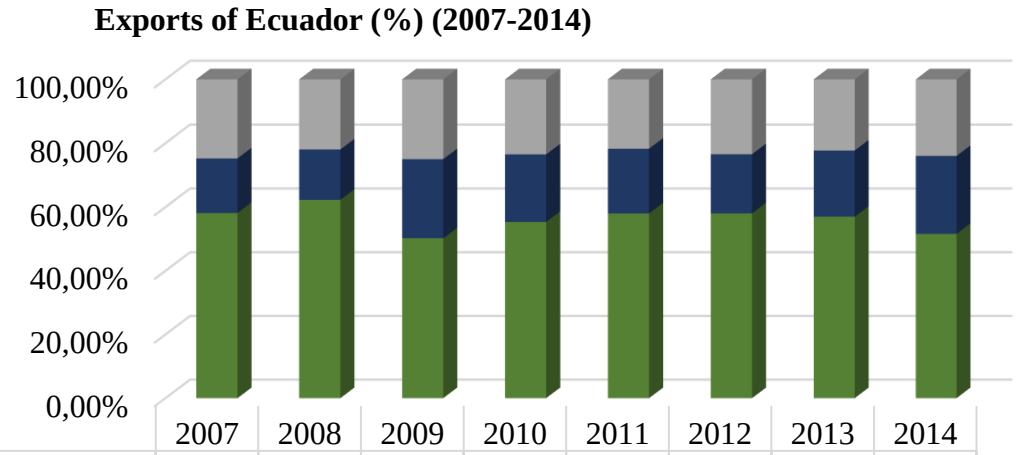
Elaborated by: Andrea P. Gómez Yánez

Now, when looking at foreign trade data it's even more evident the vulnerability of both economies in terms of global competition. On the one hand, by the end of the 1930s Taiwan was the world's sixth major tea producer and the third major banana producer. Most of the production of these primary goods was exported mostly to countries other than Japan. Nevertheless, the production and distribution of these commodities were under the control of the Japanese. In addition, due to a system of competition since 1940 its total production and exports decreased, because countries such as Germany started to develop synthetic camphor, a natural product that only Japan and Taiwan were able to produce at that time, affecting in this way the Taiwanese market (Hsiao, F., Hsiao, M., n.d. p.11-15). Therefore, "the government began encouraging investment in non-agricultural industry" (Economic History Association, n.d., p.1.).

While in Ecuador (Graphic 9), its economy has proven to be highly dependent on oil exports and not entirely on traditional exports such as bananas, shrimps, cocoa and its derivatives, coffee and its derivatives nor on non-traditional exports, so that it can easily be affected by the volatility of oil prices (Banco Central del Ecuador, 2014).

GRAPHIC 9.

Exports of Ecuador in the period 2007-2014 (%).



	2007	2008	2009	2010	2011	2012	2013	2014
Non Oil Exports - Non traditional	24,76%	21,96%	24,98%	23,50%	21,72%	23,46%	22,27%	24,00%
Non Oil Exports - Traditional	17,09%	15,76%	24,79%	21,19%	20,29%	18,50%	20,73%	24,40%
Oil Exports	58,16%	62,28%	50,24%	55,31%	57,99%	58,04%	57,00%	51,61%

Source: Banco Central del Ecuador

Elaborated by: Andrea P. Gómez Yánez

1.2.2. Level of investment in Taiwan and Ecuador before the adoption of economic strategies.

First of all, in terms of investment before the adoption of economic strategies it's important to clarify that due to the different periods of study the analysis concerning Taiwan and Ecuador present different approaches, while Japan evidenced increasing levels of foreign investment form Japan, Ecuador evidenced increasing levels of public investment.

On the one hand, before the arrival of the Japanese, Taiwan was a trading center that remained as an unruly (Hays, 2013, p.1), "labor-abundant and capital-scarce" (Riedel, 1975, p.33) place. Thus, since the Japanese saw in this Island a comparative advantage due to its subtropical location that enabled it to produce different crops (Hsiao, F., Hsiao, M., n.d, p.12), and hence an opportunity for the development of its industries by having it as a potential supplier of raw materials, as well as a colonial market for its goods (Library of Congress, 2005, p.2), they started to invest mainly in the agricultural sector, giving way to the

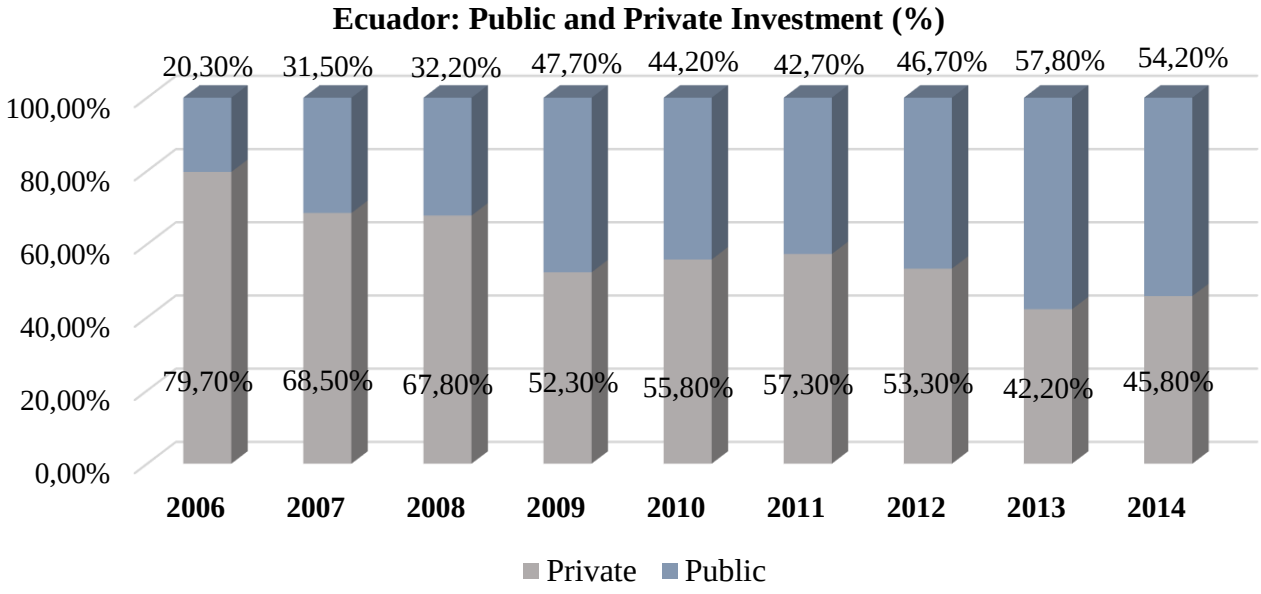
first step of a process of modernization that involved the improvement of cultivation methods, intensive research to cope with Taiwan's natural disadvantages, but mainly most of the investment was aimed at modernizing irrigation systems and controlling extensive floods (Hsiao, F., Hsiao, M., n.d, p.12), allowing in this way the development of "a new class of owner cultivators in rural areas" (Library of Congress, 2005, p.3).

This highly advanced agricultural sector helped Taiwan to overcome the effects of war (Hsiao, F., Hsiao, M., n.d, p.15). However, for a sustainable growth by the end of 1950 it was necessary to start working on the development of a more "outward looking industrialization strategy" (Riedel, 1975, p.508). Thus, the government began to intervene, so that by 1960 through the "Statute for the Encouragement of Investment", they established certain measures in order to attract foreign investment (Riedel, 1975, p.508-509).

On the other hand, with regard to Ecuador, it's possible to see the evolution of both public and private investment.

GRAPHIC 10.

Ecuador's Public and Private Investment (%).



Source: Banco Central del Ecuador

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Since 2006, private investment has been decreasing while public investment has been increasing. This can be explained on the one hand due to the policy that the National Government of Rafael Correa Delgado, implemented seeking to encourage the construction of roads, hydroelectric projects, schools, hospitals, among others to stimulate economic growth (Banco Central del Ecuador, 2014). On the other hand, the decrease in private investment can be explained due to an unstable ground and the challenges that some policies and regulations, namely labor regulations represent to business access, as well as the weakness of public institutions and a limit domestic market that has restrained investment in the non-extractive sectors (Santander Trade Portal, 2017). As a consequence, this shows that the Ecuadorian economy is becoming increasingly dependent on public investment, which according to Prado (2010) is critical because "public investment depends on oil prices and tax revenues, moreover, less private investment, less generation of wealth by companies, less tax collection and therefore less ability to maintain the pace of public investment can lead to an economic crisis".

Thus, it's worth mentioning that public investment has an important role in the economy, however it shouldn't undermine private investment but rather complement and promote it (Prado, 2010, p. 8) taking into account the importance of the capital that it brings to countries that do not have a comprehensive capacity to generate large flows of domestic investment and that by the way require of higher investment in order to achieve increased targets of growth in national income (Ekos, 2017).

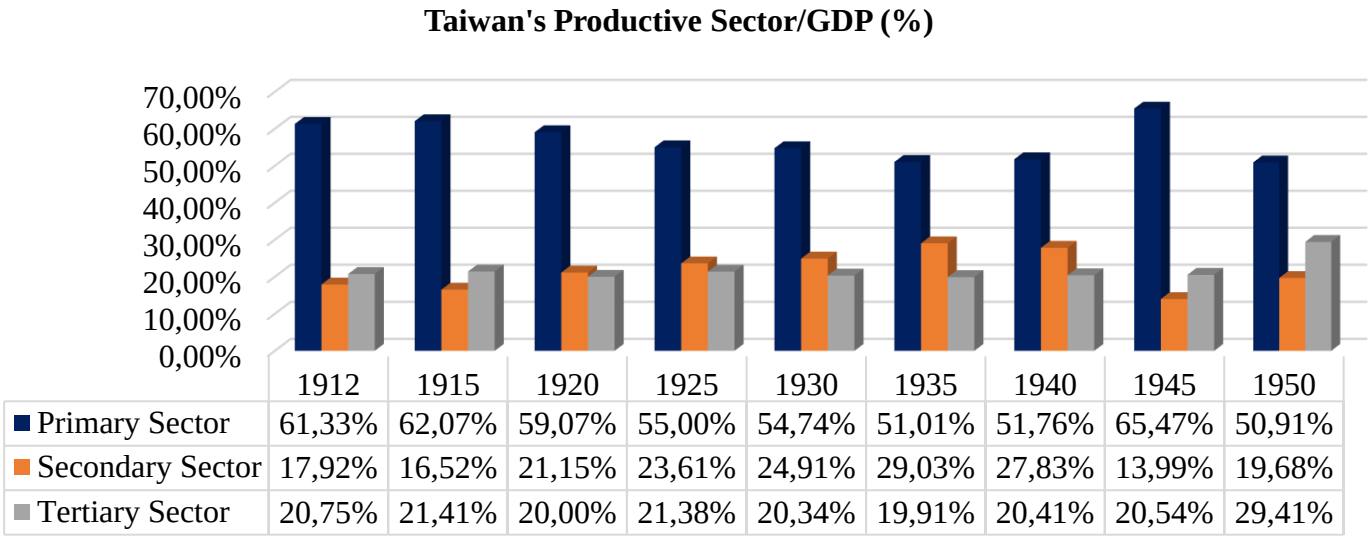
1.2.3. Contribution of the productive sectors of both Taiwan and Ecuador to the GDP before the adoption of economic strategies.

As noticed above**,** before the adoption of economic strategies aimed at generating industrialization and therefore development, the primary sector, which involved the extraction and harvesting of the raw materials for the Japanese industry (Library of Congress,

2005, p.2) constituted one of the main sectors that contributed to the GDP of Taiwan. While in Ecuador, when looking at the data it's evident that the tertiary sector which is principally engaged in the production of services and therefore, related to the generation of employment by means of its different subsectors such as "commerce, transport, communications, call center, finance, tourism, hospitality, leisure, culture, entertainment, public administration and so-called public services, provided by the State or private initiative (health, education, customer service), among others" (El Telégrafo, 2015), has proven to be the main contributor to the country's GDP (Graphic 12) and the one that can give by the way greater added value to technological, human and intangible capital (Uquillas, 2007, p.35-38).

This sector is followed by the primary and the secondary sector, snd the one that determines the level of development of a country on the basis of a basic division between industrialized or developed countries and developing countries characterized by being the suppliers of raw materials. In addition, the development of the tertiary sector in Ecuador is just a consequence of the development of the promotion of the latters (Uquillas, 2007, p.35-38).

GRAPHIC 11. *Taiwan's Productive Sectors/ GDP (%).*



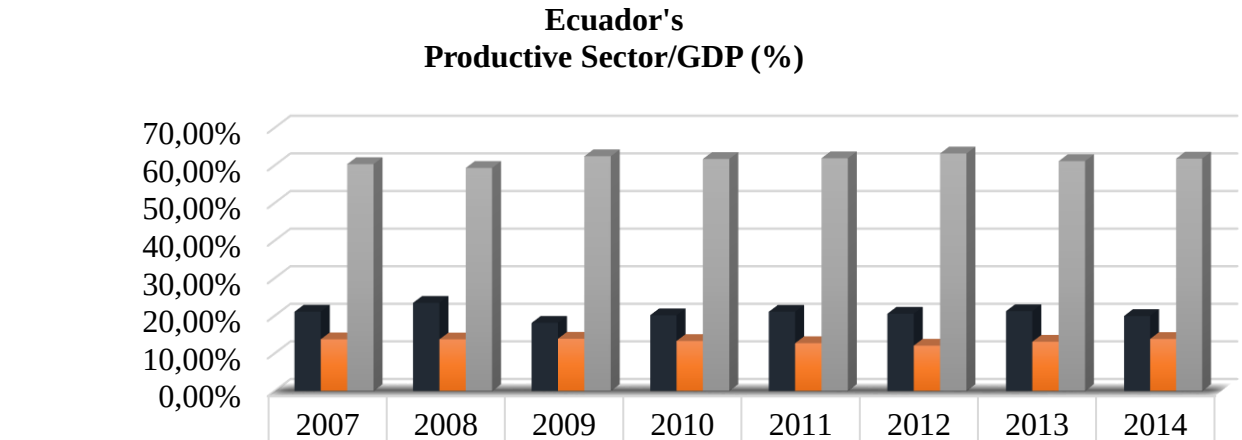
	1912	1915	1920	1925	1930	1935	1940	1945	1950
Primary Sector	61,33%	62,07%	59,07%	55,00%	54,74%	51,01%	51,76%	65,47%	50,91%
Secondary Sector	17,92%	16,52%	21,15%	23,61%	24,91%	29,03%	27,83%	13,99%	19,68%
Tertiary Sector	20,75%	21,41%	20,00%	21,38%	20,34%	19,91%	20,41%	20,54%	29,41%

Source: Mizoguchi, 1999

Elaborated by: Andrea P. Gómez Yánez

GRAPHIC 12.

Ecuador's Productive Sectors/ GDP (%).



	2007	2008	2009	2010	2011	2012	2013	2014
Primary Sector	21,06%	23,42%	18,10%	20,13%	21,06%	20,53%	21,19%	19,93%
Secondary Sector	13,73%	13,71%	13,88%	13,29%	12,70%	12,04%	13,08%	13,83%
Tertiary Sector	60,31%	59,29%	62,41%	61,69%	61,89%	63,15%	61,11%	61,79%

Source: Banco Central del Ecuador

Elaborated by: Andrea P. Gómez Yánez

Therefore, in Taiwan vulnerability can be evidenced when even if by 1930 all the Taiwanese crops reached its maximum production until 1940 (Economic History Association, n.d., p.1.), once again due to a system of competition the Taiwanese market was affected, hence the total production and distribution of commodities started to decrease (Hsiao, F., Hsiao, M., n.d. p.11-15). This system of competition was because countries such as Germany started to develop synthetic camphor, a natural product that only Japan and Taiwan were able to produce at that time (Hsiao, F., Hsiao, M., n.d. p.11-15). As a consequence and as mentioned before "the government began encouraging investment in non-agricultural industry" (Economic History Association, n.d., p.1.). In Ecuador, this vulnerability can be evidenced by a secondary sector which is the least developed, demonstrating this country to be a supplier of raw materials rather than an industrialized one.

1.3. Individuals' living conditions in Taiwan and Ecuador before the adoption of economic strategies.

Underdevelopment in economies such as that of Taiwan before the adoption of economic strategies, and of Ecuador, is evidenced not just in the lack of economic development, industrialization and growth, but also in the quality of life of its inhabitants that has been characterized by inequality, exploitation and poverty as the main issues. Thus, this subchapter analyzes the living conditions of the Taiwanese and the Ecuadorians before the adoption of economic strategies as a way to explain economic vulnerability through their societies.

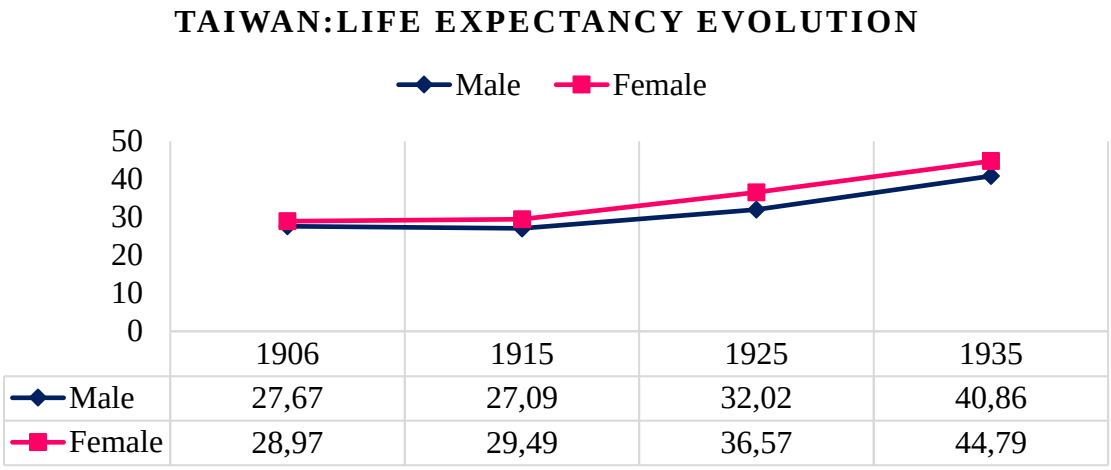
1.3.1. Human Development Index in Taiwan and Ecuador before the adoption of economic strategies.

First of all, it's important to mention that since Taiwan is not recognized by the United Nations as a sovereign State, its Human Development Index (HDI) hasn't been calculated (Dumith, Hallal, Reis, Kohl III, 2011, p. 25). However since 1992 "Taiwan's government collected the island's statistics on its own, based on the methodology used by the UN study to determine how well Taiwan was doing" (Shu-yuan & Chang, 2014, p. 1). Therefore, the HDI analysis will be made on the basis of its two main components which are life expectancy and education index. Gross National Income per capita index will not be taken into account since before 1962 there isn't official data.

As it's known Taiwan was an Island "conducted on a small-scale and oriented to subsistence economy" (Chang, n.d, p.37). In terms of life expectancy, according to data there has been a sustained growth over the long term, where women enjoyed a higher life expectancy than men.

GRAPHIC 13.

Taiwan's Life Expectancy Evolution.



	1906	1915	1925	1935
Male	27,67	27,09	32,02	40,86
Female	28,97	29,49	36,57	44,79

Source: Shi-yung, 2004

Elaborated by: Andrea P. Gómez Yánez

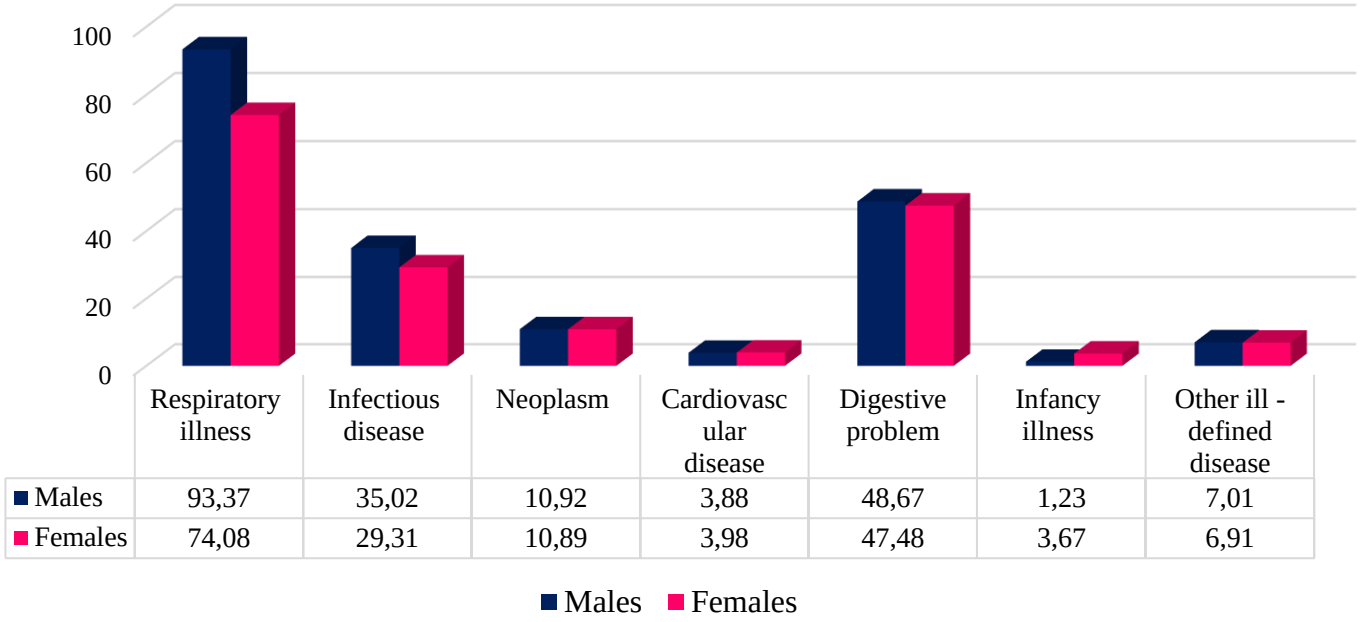
According to George Barclay (1954), this increase can be explained due to a decline in infectious diseases by means of mass vaccinations. While Wenshan (1996) argued that this was due to "improvements in sanitation works and public health intervention by the Japanese" (Shi-yung, 2004, p.235), efforts that were related to colonial development (Shi-yung, 2004, p.231-235). However, even if it's possible to see an increase, where in 1935 life expectancy represented 40,86 years for male and 44,79 years for female; and in 1940 44,8 years in average for both sexes, it remained below the worldwide life expectancy average which was estimated around 63 years (Foschiatti & Ramirez, 2000,p. 2).

One of the main causes of death between 1895 and 1945 aside from unknown illness, was respiratory illness, followed by infectious disease, neoplasm, cardiovascular disease, digestive problems, infancy illness and other ill-defined diseases (Shi-yung, 2004, p.15) (Graphic 14).

GRAPHIC 14.

Mortality Rates by Cause of Death per 10,000 Population in Taiwan (1895-1945).

Taiwan: Mortality Rates by Cause of Death per 10,000 Population (1895-1945)



	Respiratory illness	Infectious disease	Neoplasm	Cardiovascular disease	Digestive problem	Infancy illness	Other ill - defined disease
Males	93,37	35,02	10,92	3,88	48,67	1,23	7,01
Females	74,08	29,31	10,89	3,98	47,48	3,67	6,91

Source: Shi-yung, 2004

Elaborated by: Andrea P. Gómez Yánez

In terms of education, primary education included grades 1–8, secondary education grades 9–12 and tertiary education "schooling of beyond 12th grade" (Godo, 2012, p.15). According to data (Chart 3) it's possible to see that the average years of schooling is very low and concentrated in primary education. In addition, it's possible to see a big difference in the average years of schooling between men and women in all three categories of education by level. However, in the following years the increase in the average years of schooling can be explained due to Japan's intervention where the main interest was to generate support for its expansion and for its policies of colonization (Wu, Chen, Wu, 1989).

CHART 3.

Average years of schooling by education level in Taiwan from 1900 to 1950.

Taiwan: Average years of schooling by education level									
Year	**Primary**			**Secondary**			**Tertiary**		
	Both Sexes	**Male**	**Female**	**Both Sexes**	**Male**	**Female**	**Both Sexes**	**Male**	**Female**
1900	0,41	0,77	0,000011	0	0	0	0	0	0
1905	0,47	0.89	0,0013	0,00018	0,00034	0	0	0	0
1910	0,53	0,99	0,012	0,00065	0,0012	0	0	0	0
1915	0,57	1,06	0,031	0,0014	0,0026	0	0	0	0
1920	0,62	1,15	0,054	0,0043	0,0079	0,0004	0,00022	0,00043	0
1925	0,8	1,43	0,13	0,0081	0,015	0,0011	0,00067	0,0013	0
1930	1,02	1,74	0,25	0,012	0,02	0,0028	0,001	0,0019	0
1935	1,28	2,12	0,4	0,015	0,025	0,0042	0,0013	0,0026	0
1940	1,56	2,49	0,6	0,019	0,031	0,006	0,0015	0,003	0
1947	2,03	3	1,06	0,043	0,065	0,021	0,011	0,017	0,0049
1950	2,46	3,45	1,37	0,066	0,098	0,032	0,02	0,03	0,0091

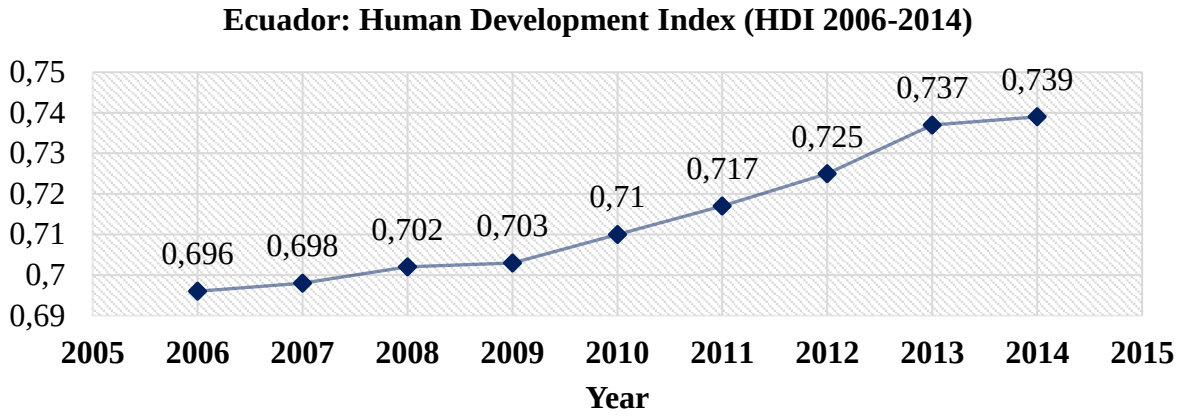
Source: Godo, 2012

Elaborated by: Andrea P. Gómez Yánez

In the case of Ecuador in contrast to Taiwan, it's possible to see its Human Development Index evolution during the period 2014-2016. The data shows that there has been a positive increase, which entails improvements in the fundamental dimensions of human development.

GRAPHIC 15.

Ecuador's Human Development Index from 2006 to 2014.



Source: PNUD, 2017

Elaborated by: Andrea P. Gómez Yánez

Thus, it has been a consequence of an improvement in life expectancy at birth that increased from 74,1 years in 2005 to 75,9 years in 2014, as well as an improvement in the mean years of schooling from 7,3 to 8,3 in the same period and finally of a GNI per capita that increased from $8.252 to $10.680. This has helped Ecuador to move from occupying position 91 in 2006 to position 88 out of 188 countries in 2014 (United Nations Development Programme, 2014) (Chart 4).

CHART 4.

Evolution of Ecuador's fundamental dimensions of human development.

Year	Life expectancy at birth	Mean years of schooling	GNI per capita (2011 PPP$)
2005	74,1	7,3	8.252,00
2010	75	7,5	9.215,00
2011	75,2	7,8	9.769,00
2012	75,4	8	1.017,00
2013	75,7	8,3	10.471,00
2014	75,9	8,3	10.680,00

Source: UNDP, 2014

Elaborated by: Andrea P. Gómez Yánez

However, Ecuador's "2015 HDI of 0.739 is below the average of 0.746 for countries in the high human development group and below the average of 0.751 for countries in Latin America and the Caribbean" (UNDP, 2014, p.4).

1.3.2. Poverty in Taiwan and Ecuador before the adoption of economic strategies

Before the Japanese administration, Taiwan was a vulnerable and poor nation that ranked "in the lowest tier of the world's poorest countries" (Luck, 2016, p.1) with a traditional agroexport-dependent structure, that lacked of "infrastructure, social services and investments in additional means of production" (Wiegersma & Medley, 2000, p.36). Therefore, it wasn´t able to produce goods at competitive prices, affecting by the way the development of its economy and stagnating its capacity to generate an economic surplus. In addition, its economic activities were based on extreme exploitation which involved "poor working conditions, long hours, low wages" (Wiegersma & Medley, 2000, p.37) among others; its population living standard was unattended (Wiegersma & Medley, 2000, p.36-39) as a consequence of the lack of public investment in social development (Santos, 2017).

In Ecuador unlike Taiwan, it's possible to measure poverty throughout the Multidimensional Poverty Index[3] launched by Rafael Correa and based on the "Good Living". This Index analyzes information since 2009 due to the fact that as of this year it's possible to measure the 12 indicators of contextual and structural type that make it up. These 12 indicators are comprised within 4 main dimensions (Chart 5) which are education; work and social security; health, water and food; habitat, housing and healthy environment (INEC, n.d. p.1).

[3] For each of the 12 indicators the deprivation to the exercise of a right is established. If the person has deprivation in 4 or more of the 12 weighted indicators, the person is identified as multidimensional poor. While to consider a person in a situation of extreme poverty, it is necessary to establish at least 6 deficiencies, 50% of the indicators (INEC, n.d. p.1 − 2).

CHART 5.

Ecuador's Multidimensional Poverty Index Indicators and Dimensions.

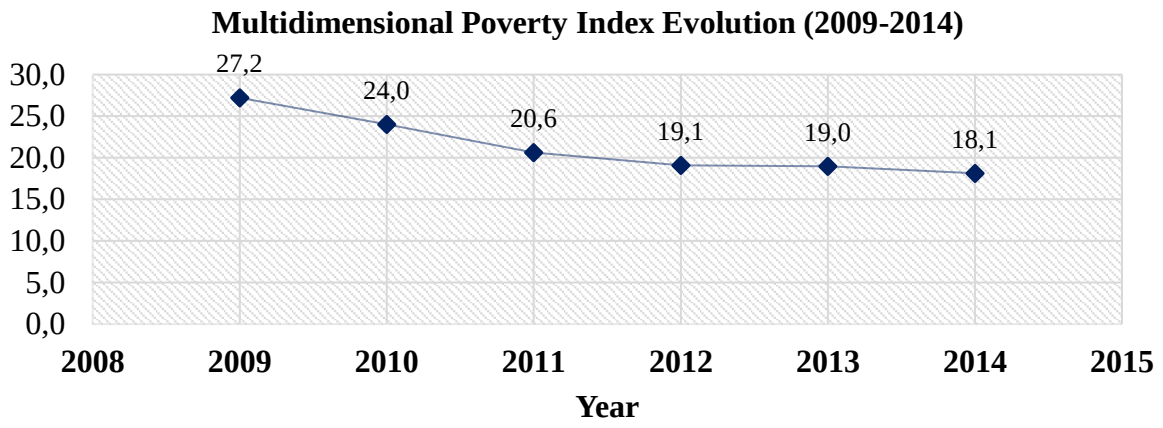
Dimensions	Indicators	Years						
		2009	2010	2011	2012	2013	2014	2015
Education	Absence of basic education and baccalaureate	1,5	1,3	1,0	1,0	0,9	0,9	0,8
	No access to higher education for economic reasons	0,5	0,4	0,3	0,3	0,3	0,4	0,4
	Incomplete educational achievement	3,8	3,5	3,0	2,8	2,9	2,8	2,6
Work and Social Security	Child and Adolescent employment	0,9	0,7	0,5	0,5	0,4	0,4	0,5
	Unemployment or inappropriate employment	3,8	3,3	2,9	2,7	2,8	2,7	2,6
	No contribution to the pension system	3,7	3,3	2,8	2,6	2,7	2,6	2,4
Health, Water and Food	Extreme poverty due to income	1,8	1,6	1,4	1,3	1,0	0,9	1,0
	Without water service by means of public grid	3,9	3,6	3,2	3,0	2,8	2,6	2,4
Habitat, Housing and Healthy Environment	Overcrowding	1,3	1,1	0,9	0,7	0,9	0,9	0,8
	Housing deficit	2,6	2,4	2,0	1,8	1,9	1,9	1,7
	Without sanitation of excreta	1,8	1,6	1,4	1,1	1,3	1,1	1,0
	Without garbage collection service	1,6	1,4	1,3	1,3	1,0	0,9	0,8
Total		27,2	24,0	20,6	19,1	19,0	18,1	17,0

Source: Instituto Nacional de Estadísticas y Censos, 2018

Elaborated by: Andrea P. Gómez Yánez

GRAPHIC 16.

Multidimensional Poverty Index Evolution from 2009 to 2014.



Source: INEC, n.d.

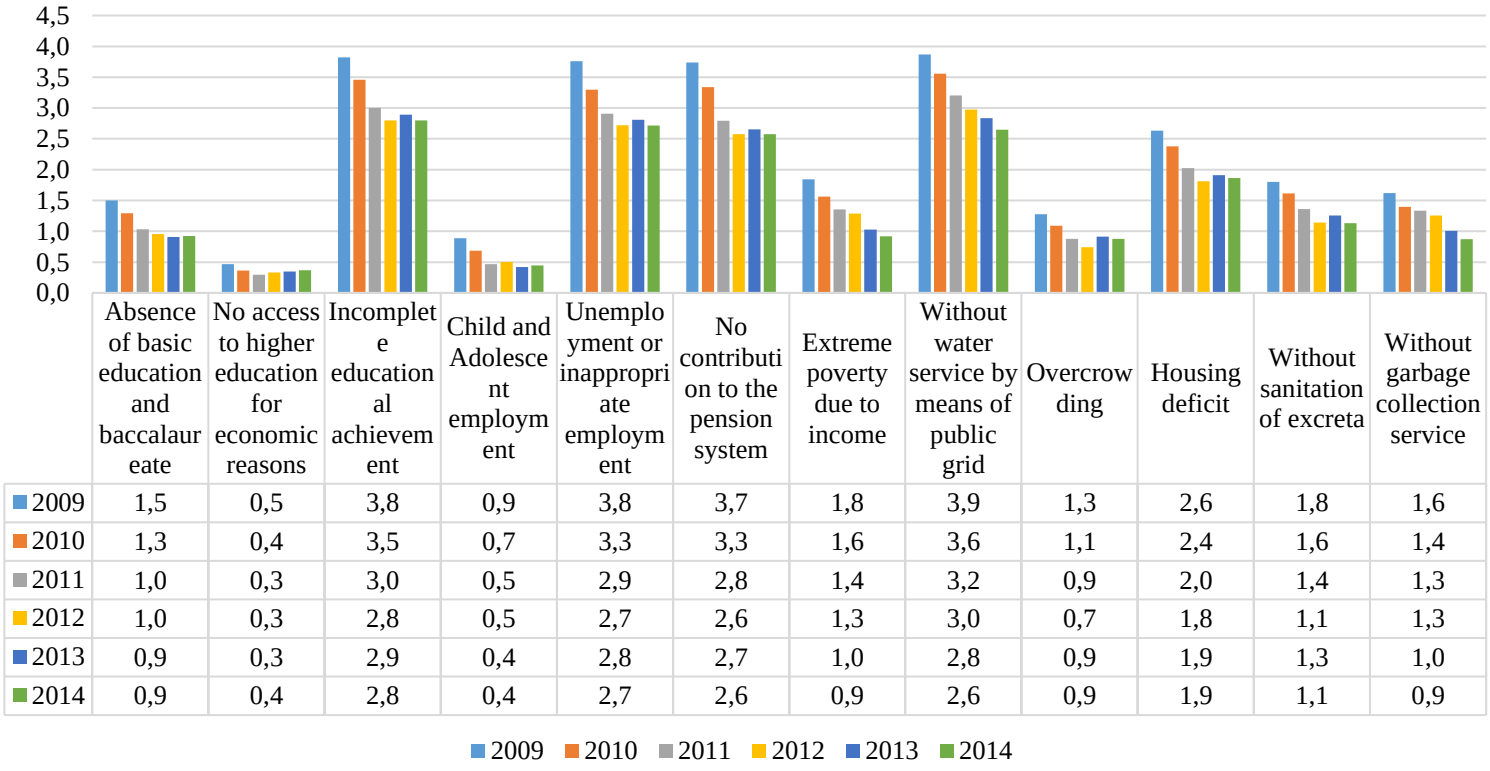
Elaborated by: Andrea P. Gómez Yánez

According to data published by INEC, in Ecuador in the period 2009-2014 there has been a decrease in the Multidimensional Poverty Index, which can be explained due to investment and policies towards social development (Ministerio Coordinador de Desarrollo Social, 2017). However, it's possible to see that the main factors that have contributed to poverty are incomplete educational achievement within the Education dimension; unemployment or inappropriate employment within the Work and Social Security dimension; the lack of services by means of a public grid within Health, Water and Food dimension; and housing deficit within the Habitat, Housing and Healthy Environment dimension (Graphic 17).

GRAPHIC 17.

Ecuador's Multidimensional Poverty Index (2009-2014).

Ecuador: Multidimensional Poverty Index (2009-2014)



	Absence of basic education and baccalaureate	No access to higher education for economic reasons	Incomplete educational achievement	Child and Adolescent employment	Unemployment or inappropriate employment	No contribution to the pension system	Extreme poverty due to income	Without water service by means of public grid	Overcrowding	Housing deficit	Without sanitation of excreta	Without garbage collection service
2009	1,5	0,5	3,8	0,9	3,8	3,7	1,8	3,9	1,3	2,6	1,8	1,6
2010	1,3	0,4	3,5	0,7	3,3	3,3	1,6	3,6	1,1	2,4	1,6	1,4
2011	1,0	0,3	3,0	0,5	2,9	2,8	1,4	3,2	0,9	2,0	1,4	1,3
2012	1,0	0,3	2,8	0,5	2,7	2,6	1,3	3,0	0,7	1,8	1,1	1,3
2013	0,9	0,3	2,9	0,4	2,8	2,7	1,0	2,8	0,9	1,9	1,3	1,0
2014	0,9	0,4	2,8	0,4	2,7	2,6	0,9	2,6	0,9	1,9	1,1	0,9

Source: INEC, 2018

Elaborated by: Andrea P. Gómez Yánez

So, even if there has been a decrease in this index, Ecuador keeps a high score that should keep being addressed in order to improve economic development.

1.3.3. Gini coefficient in Taiwan and Ecuador before the adoption of economic strategies.

In terms of inequality measured by the Gini coefficient, before the adoption of economic strategies, both economies demonstrated to have problems concerning income distribution, Taiwan more than Ecuador.

According to the Council for Economic Planning (1993), in 1952, a year before the adoption of economic strategies, Taiwan's Gini Coefficient was estimated at 0,618, which demonstrated inequality in terms of income distribution. This can be explained due to the presence of the Japanese that even if they contributed to important investments in rural areas within the territory, they also "inhibited the growth of the indigenous industrial entrepreneurship on Taiwan" (Stewart, 1983, p.66-86) by means of a policy that reserved most industrial activity to themselves during its occupation (Stewart, 1983, p.85). Hence, its production was directed mainly for the Japanese consumption and military expansion. Concerning society, inequality can be explained in terms of the lack of opportunities, as well as existent unemployment, low wages, and discrimination in social services such as housing, education, among others (Winckler & Greenhalgh, 1988, p.77).

However, in 1953 Gini Coefficient declined to 0,57 (You, 2014, p. 205), due to a land reform that was introduced at the end of World War II, which included "rent reduction (1949), the sale of public (1951) land, and the initiation of a land-to-the-tiller program in 1953" (Koo, 1966, p.150) that benefited tenant farmers and cultivator purchasers by increasing its income and reducing somehow the existing inequalities (Koo, 1966, p.150).

On the other hand, according to INEC, in 2014 Ecuador's Gini Coefficient was estimated at 0,4665, which showed a relatively slight improvement as compared with the

previous year, where the Gini Coefficient was estimated at 0,4850. This implies that even if there has been a slight improvement, in Ecuador inequality remains at high levels being one of the biggest problems of its society. Historically, this can be a consequence of political instability, the lack of policies linked to social interest and to its national reality (Sarmiento, 2017, p. 50) and according to the Ecuadorian historian, Juan Paz y Miño, a consequence of the concentration of wealth that has always characterized the country since the colonial period (Cited in Valdivieso, 2015, p.1). Therefore, the country has been losing its skilled workforce that has decided to leave the country looking for better opportunities abroad, while the development of the national economy has been affected (UNICEF, n.d.).

In this way, considering the specific objective number 1, which was, to explain the conditions of economic vulnerability of Taiwan and Ecuador before the adoption of strategies aimed at generating economic development, it was possible to determine that the main trigger of this economic vulnerability identified as a common fact between both economies, is a subordination to a productive specialization based on a primary-export structure, that led to demonstrate first of all, an underdevelopment due to a GDP that in both cases placed them among poor market economies, a world income distribution where they ranked among the last positions and a risk related to demographic growth. Then, regarding industrialization and production levels, vulnerability was evidenced in terms of a system of competition, being these economies more likely to be affected by the volatility of prices, exogenous shocks and global competition. Thus, causing an environment of very high uncertainty, dependence and hence, of vulnerability related to economic cycles. Finally, in terms of individual's living conditions, it was manifested through the quality of life of its inhabitants which has been in both cases characterized by inequality, exploitation and poverty as the main issues.

CHAPTER 2 ECONOMIC POLICIES ADOPTED BY TAIWAN TO GENERATE ECONOMIC GROWTH IN 1953-1983

"Even if conditions were not the most appropriate, Taiwan knew how to combine them with policies that not only resulted in sustained growth and equity, but also that protected the Island from the effect of exogenous shocks" [4]

Gustav Ranis, 2007

2.1. Policies to promote industrialization and innovation.

The analysis of the economic policies adopted by Taiwan to generate economic growth during the period from 1953 to 1983 demonstrate the importance of the government's intervention in the promotion of industrialization, innovation, inclusion and saving as key elements to cope a system of competition and the effects of exogenous shocks to which Taiwan, as a traditional society, has historically been exposed. Thus, this has been crucial for charting the path towards a modern society and hence, towards a rapid economic development and growth that have placed Taiwan as a successful model to follow.

In this context, in the interwar period the policies aimed at promoting industrialization in Taiwan began under the Japanese occupation, which contributed to the development of different heavy industries such as "aluminum, chemicals, cement and paper" (Balassa, 1970, p.4). Since 1950, this process was followed by an import substitution policy aimed at stimulating economic development and growth. However, since 1960 due to the difficulty in relying on agricultural exports it changed to an outward-looking development strategy by means of an export-oriented policy supported by the government, whose role became crucial for an economic growth based on production. In this regard, this sub-chapter analyzes those

[4] Written by Gustav Ranis, international expert in development economics and the Frank Altschul Professor Emeritus of International Economics at Yale.

policies that allowed the transition from a traditional society with an economy based on agriculture, to a modern society based on labor-intensive exports, as well as their economic and social impact in the period from 1953 to 1983.

2.1.1. Taiwan's policies to promote industrialization and innovation in the period 1953-1983.

Despite the development of different heavy industries such as “aluminum, chemicals, cement and paper” as a consequence of the industrialization process that began under the Japanese occupation (Balassa, 1970, p.4), the effects of the Second World War were crucial for Taiwanese economy because it damaged industrial plants that were somehow restored, but the domestic market wasn’t able to lead a process of expansion or the full utilization of existing capabilities. Hence, by 1950 Taiwan carried out an import substitution policy (Yang, 1993, p.387) that involved textiles, shoes and clothing (Balassa, 1970, p.5) as a way to reconstruct it economy and stimulate economic growth (Yang, 1993, p.387).

However, due to the difficulties that import substitution brought to the economy, mainly slow growth and balance of payment problems, and due to internal difficulties such as the smallness of domestic markets as well as the reduced demand for primary products in Japan, which make it more difficult for Taiwan to rely on agricultural exports, by 1960 Taiwan adopted an outward-looking development strategy aimed at developing and improving labor-intensive manufactured goods for export and thus opted for an export-oriented policy aimed at stimulating exports and rapid economic growth (Balassa, 1970, p. 1-6). Since then, according to Yu (1982) and Kuo (1983) “labour intensive industries were comparatively advantageous and became the key industries that gained the support of the government” (Cited in Yang, 1993, p. 387) that after 1953 implemented nine consecutive plans for economic growth by means of the development of heavy industries (Braaten, 2010, p.49-50) such as the “chemical industry, petrochemical intermediaries, and large-scale

integrated production" (Braaten, 2010, p.52). To this end, different incentives, as for example corporate tax holidays were offered (Braaten, 2010, p.52).

Therefore, the role of government in Taiwan's industrialization and innovation process became crucial for an economic growth based on production (Braaten, 2010, p.49-50), process that was "influenced by the availability of a well-motivated labor force with a high educational level and relatively low wages that provided the Island with a competitive advantage in exporting labor-intensive goods" (Balassa, 1970, p.8) and accompanied by policies that built favorable initial conditions such as the transition of "farmers' associations into bottom-up institutions which undertook local infrastructural decisions, created cooperative banking networks, and helped diffuse both agricultural and food processing-related non-agricultural technology" (Ash & Greene, 2007, p.39).

In 1960, the industrial sector moved from food processing to labor-intensive exports which included industrial products such as electronic assembly, textiles, among others (Ash & Greene, 2007, p.39). By 1970, in accordance to Yu (1982) and Kuo (1983) technology intensive as well as capital intensive industries represented the new key industries (Cited in Yang, 1993, p.387), so this implied that during this two decades Taiwan moved from being an agricultural to an industrial-based economy (Mao & Schive, 1995, p. 38). By 1973, the government focused on the creation of the Industrial Technology Research Institute (ITRI) that forged research in strategic areas that resulted in the exportation of labor-intensive manufactured goods, contributing by the way to economic growth (Braaten, 2010, p.53).

In 1980, due to a wage increase, Taiwan lost its comparative advantage "in the production of labor-intensive products" (Cited in Yang, 1993, p.387). Moreover, due to technology levels that were not comparable to that of developed countries, Taiwan suffered from bottlenecks that lead to develop strategic industries to overcome this problem by means of preferential policies that were introduced in 1982 and based on six criteria, which were

"high linkage effect; high market potential; high technological intensity; a high degree of value added; a low energy coefficient; and a low level of polluting emissions" (Yang, 1993, p. 387).

For this, the allocation of credit to strategic industries "at below market interest rates for long term" (Noland, 2001, p.2) - where industrial development banks, mainly the Bank of Communications, played a significant role (Braaten, 2010, p. 54) - as well as "sectorally differentiated profit taxes, highly differentiated tariffs and non-tariffs barriers" (Noland, 2001, p.2), and the subsidies that Taiwan's government provided through preferential loans that could be used not just in new investment projects but also in the purchase of equipment, machines, in the development of new products and the promotion of exports as the main ones. Indeed, 32,14% was allocated to strategic industries. Another way to subsidize these industries was through technology and management assistance" where local firms were advised by six governmental consulting institutions thanks to the coordination carried out by the Ministry of Economic Affairs (Yang, 1993, p.389).

Overall, this constituted fundamental elements within the industrial policy that lead to economic growth (Noland, 2001, p.2). As a result, agriculture moved from being a historically important component of the economy "to an unnecessarily heavily subsidized appendage of the economy" (Ash & Greene, 2007, p. 42).

2.1.2. Economic effects of the policies applied by Taiwan to promote industrialization and innovation in the period 1953-1983.

The economic effect of a policy that began in the mid-1950's and whose main purpose was industrialization and innovation through a modernization process that involved the exports of labor intensive manufactured goods, was the growth of the national economy, due to the fact that it helped to improve technical industries (Balassa, 1970, p.1), to encourage research and the use of technology (Ash & Greene, 2007, p.38), to step up production, to

generate demand for domestic products and therefore, to raise incomes (Balassa, 1970, p.1). Hence, this policy was crucial for the development of the Island, because considering a system of external shocks to which all societies and economies are exposed, it protected Taiwan from them, and moderated its vulnerability to crisis by generating economic growth (Ash & Greene, 2007, p.36).

In terms of Real GDP, it's possible to see an average growth of 8,78% during the period 1953 to 1983, with a significant average annual growth increase of 10,60% during 1975 and 1980, which can be explained due to the promotion of research in strategic areas supported by the government, that resulted in the exportation of labor-intensive manufactured goods and that contributed to economic growth (Chart 6) (Braaten, 2010, p.53).

CHART 6.

Taiwan's Real GDP evolution from 1953 to 1983.

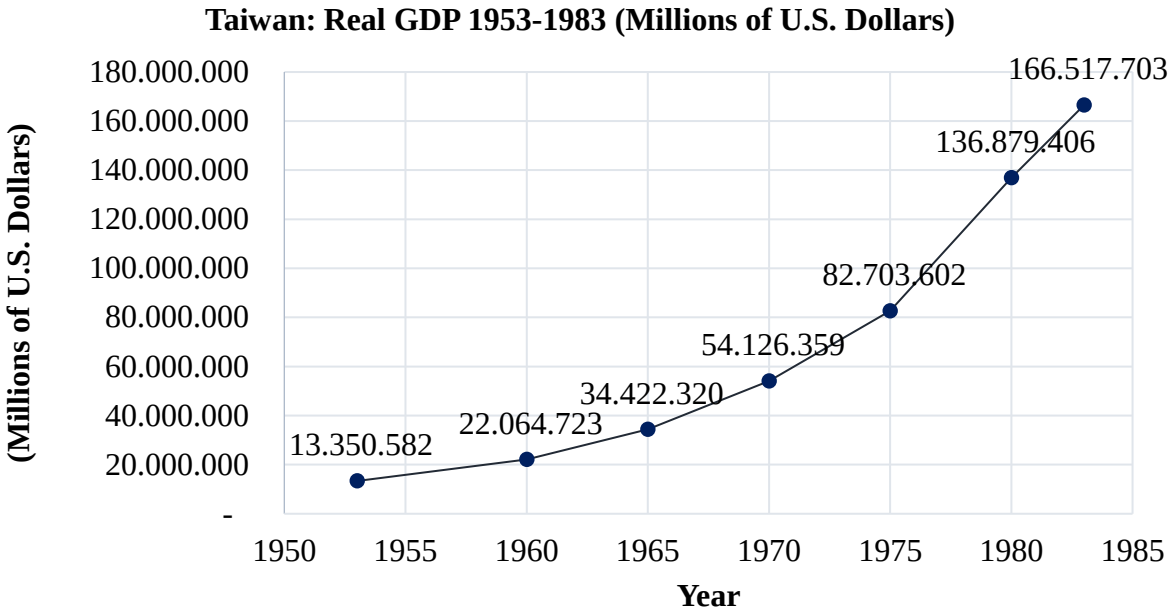
Year	Real GDP (Millions of U.S. Dollars)	Real GDP: Average Annual Growth	
1953	13.350.582		
1960	22.064.723	7,44%	
1965	34.422.320	9,30%	
1970	54.126.359	9,47%	
1975	82.703.602	8,85%	
1980	136.879.406	10,60%	
1983	166.517.703	6,75%	8,78%

Source: University of Groningen and University of California, Davis, 2016

Elaborated by: Andrea P. Gómez Yánez

GRAPHIC 18.

Taiwan's Real GDP evolution from 1953 to 1983 (Millions of U.S. Dollars).



Source: University of Groningen and University of California, Davis, 2016

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In terms of foreign trade, due to industrialization and innovation policies it's possible to see a positive evolution in the exports of manufactured products which included textiles being at the forefront with the highest share, followed by Electrical Equipment, Electronics & Appliances (that since 1970 started to replace textiles), Metals & Metal Products, Plastic Products, Machinery and Plywood; while the share of agricultural and processed agricultural products that included "sugar, rice, tea, and canned and tropical fruits that in 1953 accounted for 87,4%" (Schive, 1987, p.309), decreased as well as the imports of capital goods, consumer goods and transport vehicles. Even though, there has been a slight increase in Material and Intermediate imports. Hence, this shows that within this period 1953-1983 "Taiwan exported mostly manufactured goods in exchange for materials and capital goods" (Schive, 1987, p.309).

CHART 7. *The evolution of Taiwan's exports (%) and imports (%).*

EXPORTS (%)												
		Processed agricultural Products			Manufactured Products							
Year	Agricultural Products	Sugar	Canned Food	Total	Textiles	Plywood	Plastic Products	Metals & Metal Products	Machinery	Electrical Equipment, Electronics, & Appliances	Total	Total Exports
1960	12	44	4,79	55,7	14,2	1,7	-	3,99	0,2	0,59	32,3	100
1965	23,6	13,1	10,47	30,4	15,8	5,9	-	4,75	1,3	2,67	46	100
1970	8,6	3,1	5,73	12,8	31,7	5,3	-	6,31	3,27	12,32	78,6	100
1975	5,6	5	2,9	10,8	27,6	3,3	6,5	4,79	3,62	14,72	83,6	100
1980	3,6	1,2	1,42	5,6	22,6	2,1	7,4	6,35	3,75	18,17	90,8	100
1982	1,9	0,4	0,9	5,7	21,6	1,5	6,8	7,58	3,8	17,6	92,4	100

IMPORTS (%)										
	Capital Goods		Material and Intermediates							
	Machinery	Total	Crude Oil	Iron & Steel	Chemicals	Total	Consumer Goods	Total Imports	Electrical Equipment, Electronics,	Transport Vehicles
1960	15,5	27,9	6,4	9,5	6,7	64	8,1	100	5,3	6,3
1965	12,4	29,3	2,3	11,9	10,5	65,5	5,1	100	6,3	10,3
1970	13,3	32,3	3,1	7,8	11	62,8	4,9	100	11,7	10,7
1975	16,2	30,6	10,5	6,6	12,1	62,6	6,8	100	8,5	5,3
1980	12,14	23,4	20,8	6,8	7,8	70,8	5,8	100	9,8	3,7
1982	10,4	24,8	20,5	8,7	8	67,3	7,9	100	10,6	5,5

Source: Schive, 1987

Elaborated by: Andrea P. Gómez Yánez

As a consequence, this helped Taiwan to create international competitiveness (Huerta, 2009, p.122) and therefore to moderate its vulnerability to crisis (Ash & Greene, 2007, p.36).

2.1.3. Social effects of the policies applied by Taiwan to promote industrialization and innovation in the period 1953-1983.

The economic growth that Taiwan experienced as a consequence of the promotion of industrialization and innovation policies had a positive impact on its population in terms of wealth distribution (Mao & Schive, 1995, p.23), because it encouraged growth with equity. This implies that due to this new sectoral structure of production (Noland, 2001, p.2) that generated employment opportunities (Li, 1995, p.242), accompanied not only by the increase of wage income (Mao & Schive, 1995, p.54), but also by a sense of participation and dignity (Li, 1995, p.242).

CHART 8.

Employment by kind of activity (%).

Year	Agriculture	INDUSTRIES				SERVICES				Total
		Manufacturing	Construction	Utilities	Subtotal	Commerce	Transportation	Other	Subtotal	
1952	56,10	12,40	2,40	0,20	16,90	10,60	3,40	13,00	27,00	100
1956	53,20	13,20	2,80	0,30	18,30	10,00	4,10	14,40	28,50	100
1960	50,20	14,80	3,10	0,30	20,50	10,00	4,40	14,90	29,30	100
1964	49,50	15,40	3,30	0,40	21,30	9,60	4,60	15,00	29,20	100
1968	40,80	18,60	4,40	0,40	25,40	13,00	4,80	16,00	33,80	100
1972	33,00	24,60	5,60	0,40	31,80	14,00	5,20	16,00	35,20	100
1980	19,50	32,60	8,50	0,40	42,40	16,00	5,90	16,20	38,10	100
1988	13,70	34,50	7,30	0,40	42,60	19,00	5,30	19,40	43,70	100

Source: Mao & Schive, 1995

Elaborated by: Andrea P. Gómez Yánez

As evidenced above, due to the implementation of industrial and innovation policies there has been an important decrease in employment related to agriculture, while employment in industries such as manufacturing has experienced a constant growth that together with the other industries and services have contributed to “a much more equal income distribution than in many developing countries” (Kniivilä, 2007, p.309) and therefore to less inequality and rural poverty, also as a consequence of land reforms that were introduced after the war (Kniivilä, 2007, p.309) and that lead to social stability.

In terms of GDP per capita, during 1953-1983 it’s possible to see a positive growth that in 1972 reached its highest level, with an average annual growth rate of real GDP per capita of 7,89%.

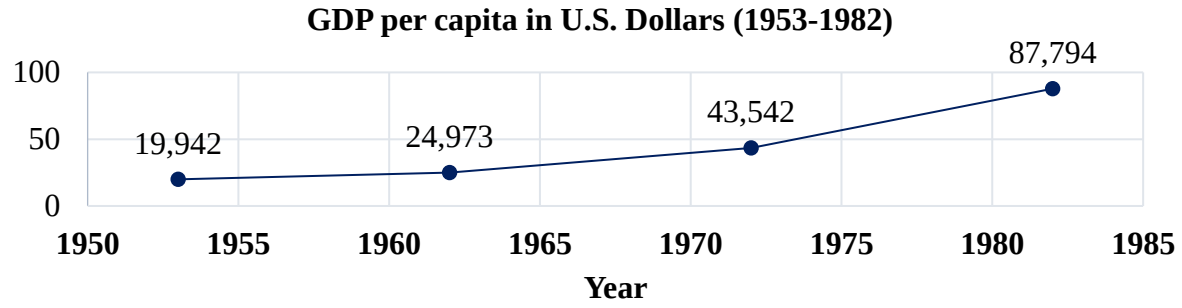
CHART 9. *Taiwan's GDP Per Capita Annual Growth Rate.*

Year	GDP per capita	Annual Growth Rate
1953	19,942	
1962	24,973	3,68%
1972	43,542	7,89%
1982	87,794	5,56%

Source: Ito & Krueger, 1995

Elaborated by: Andrea P. Gómez Yánez

GRAPHIC 19. *Taiwan's GDP per Capita evolution from 1953 to 1982 in U.S. Dollars.*



Source: Ito & Krueger, 1995

Elaborated by: Andrea P. Gómez Yánez

Moreover, since industries spread into rural areas, farmers didn't need to leave home to benefit from higher wages. In terms of infrastructure, Taiwan had well-developed communication and transportation facilities (Mao & Schive, 1995, p.24-53). However, since 1980 the promotion of skill-intensive sectors, the increase of larger private enterprises and escalation of land values led to wage inequality (Kniivilä, 2007, p.309).

2.2. Policies to promote inclusion.

Before 1953, Taiwan was an island with a big rural and indigenous population that was excluded from politics, suffering the consequences of government corruption, inflation and a worsening economic situation (Looney, 2012, p.104-105). This sub-chapter analyzes the policies that were supported by the government and that by means of inclusion and the

improvement of people's livelihood guided the different programs, projects and reforms to reduce the gap between the rich and the poor; as well as their economic and social impact in the period from1953 to 1983.

2.2.1. Taiwan's policies to promote inclusion in the period 1953-1983.

As evidenced above, policies to increase industrialization and innovation through the promotion of export industries encouraged the rapid accumulation of capital and therefore sustained economic growth. However, considering that Taiwan was an Island with a big rural population (The Economist, 2017, p.1.) in which over 50% of the population were farmers (Yueh, 2009, p.1), a crucial element for this process was also the "Land Reforms" (The Economist, 2017, p.1.) that were carried out between 1949 and 1953 (Miller, 2013) after the Second World War (Koo, 1966, p. 150) to end with the unfair distribution of land, so that farmers could appropriate their own lands, reducing in this way "the gap between the rich and the poor" (Yueh, 2009, p.1), and demonstrating "its preferred values of legal procedure and inclusion" (Brooke, Strauss, & Anderson, 2018, p.). But also, it helped to improve the conditions of people mainly indigenous people that were excluded from politics, and that suffered the consequences of government corruption, inflation and a worsening economic situation (Looney, 2012, p.104-105).

The stages of land reform started in 1949 with the setting of a rent ceiling on all leased farmland, measure that was promoted by the government; so that rents that averaged at that time over 50% and that were charged by landlords, with this provision could not exceed 37,5% of the value of the tenant's crop. Then, in 1951 the government sold 35% of public land to the tenant farmers and landless farm hands that worked on those arable crops. Finally, in 1953, the government implemented a program that was named "Land-to-the-tiller" which set a limit of three hectares for landholdings per family as the upper limit of what a family could cultivate by their own efforts. In this way, families that exceeded this limit were forced

to sell their lands to the government. As a consequence, “this policy resulted in forced sales of 139,500 hectares from 106,000 landowning families. The sale of lands was supported by the Joint Commission for Rural Reconstruction (JCRR) which allocated funds for purchases” (Miller, 2013, p.2-3). So that according to MOI statistics, during this short period, that is from 1951 to 1953, there was an increase from 57% to 90% in the amount of land owned directly by peasants (Cited in Yueh, 2009, p.1).

Hence, this land ownership to peasants led to rural development. This process was possible due to the intervention of farmers’ associations, that provided Taiwan’s small farmers credit as well as “marketing services, and during the agricultural adjustment phase they channeled subsides, public investment” (Looney, 2012, p.120) among other resources to this sector. In addition, there was a community development policy that started in 1955 known as “The People’s Livelihood Construction Campaign” whose main principle was to ensure equal access to land resources, satisfying the people’s basic needs such as housing, clothing, food, transportation, etc. through sustained levels of agricultural production (Looney, 2012, p.103-121).

It’s worth mentioning that the government was involved in this campaign and based on a law of 1943, established a system of compulsory labor that involved men between 18 and 50 years old in different projects aimed at improving people’s livelihood, which included “irrigation, road building, production and defense projects” (Looney, 2012, p.123). In 1952 the 4-H Club which stood for “head, heart, hands and health” (Ministry of Foreign Affairs, Republic of China (Taiwan), 1963, p.1) was introduced to stimulate, to develop and to include people aged from 12 to 22 who were thus “organized to learn by working and to work while learning” (Ministry of Foreign Affairs, Republic of China (Taiwan), 1963, p.1) becoming soon an important element for rural development and a driving force for the national economy (Lin, 2015, p.1) due to their contribution to the reconstruction of the island

as well as to the agricultural production (Ministry of Foreign Affairs, Republic of China (Taiwan), 1963, p.1).

In 1955, looking for an increase in the production and the quality of life, the government of Chiang Kai-shek launched the "Basic Livelihood Program", which according to Tan (1971) sought to make basic improvements in different areas such as "agricultural production, education, health and welfare" (Cited in Lin, 2015, p.1). However, due to the lack of local autonomy, meaning that village heads didn't have authority over personnel matters or budget, the work for the well-being of the community was hindered (Lin, 2015, p.1). In 1956, the government included additional projects that comprised "village public housing, bathrooms, recreation facilities, and green space" (Looney, 2012, p.123) and which required teachers and factory workers. The success of this campaign led in the period from 1965 to 1978 to a more comprehensive program named the "Community Development Campaign" in order to spread the idea of community development. This campaign started with the "People's Livelihood Social Policy that outlined four basic goals which were "to foster a spirit of proactive self-governance; to establish community service centers and community councils; to improve sanitation and public infrastructure; and to promote cooperative organizations for consumption, sideline production, marketing, and public welfare activities" (Looney, 2012, p.124).

In 1968, according to Liu (1977) the Taiwan's Provincial Government launched the "Eight-Year Community Development Plan" which required a contribution of the labor and money of villager's (Looney, 2012, p.126) and sought to improve infrastructure, to increase production in order to improve living conditions, as well as to promote spiritual civilization in order to improve public mores (Lin, 2015, p.1). In 1972 the plan extended to 10 years and remained the same but with a particular emphasis on production and cultural programs (Looney, 2012, p.126-127). In accordance with Wang (2002) the United Nations

Development Programme (UNDP) got involved in the process by helping to set up the "Research and Training Center for Community Development" (Cited in Lin, 2015, p.1). Hence, at the end this campaign resulted in major changes to the village environment (Looney, 2012, p. 128), "encouraged growth in the agricultural sector and also stimulated accumulation of real capital for industrialization and growth in saving account" (Duan, 2015, p.26).

2.2.2. Economic effects of the policies applied by Taiwan to promote inclusion in the period 1953-1983.

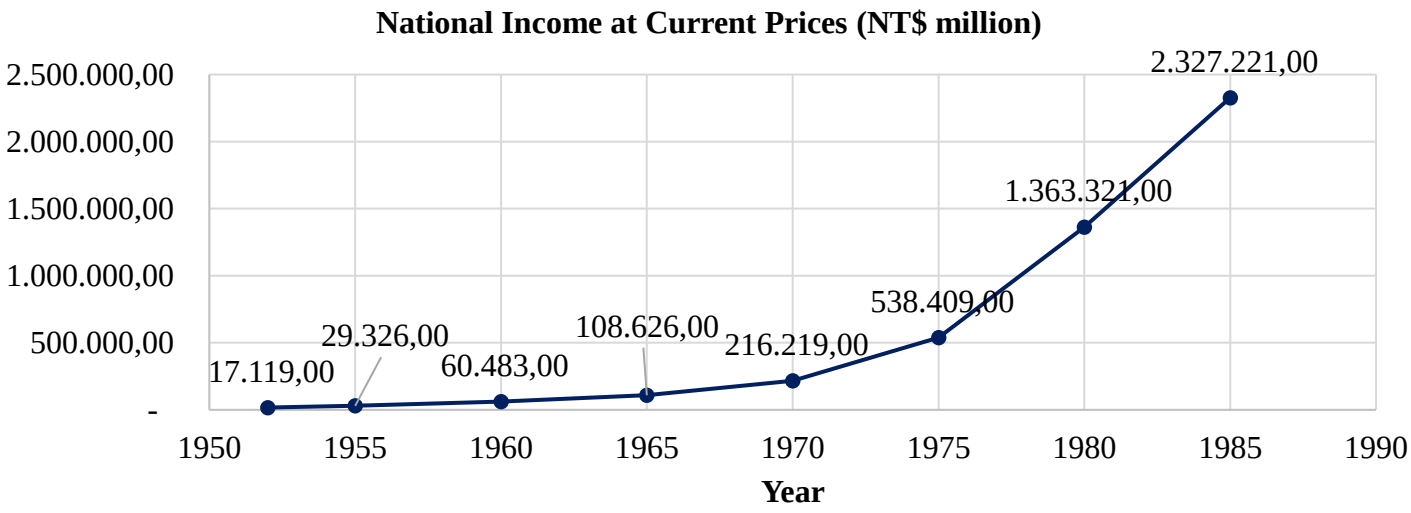
One of the main contributions of social inclusion policies to the national economy was that it gave small producers the opportunity to dominate the agricultural sector by generating higher productivity and therefore an agricultural surplus with an immediate impact that resulted in "longer-term effects on the development of Taiwan's industrial structure, with its prevalence of small and medium-sized manufacturing firms" (Jolly, n.d., p.2) as well as in an increase in national income based on paddy rice production and in an aggregate income of the farm sector (Koo, 1966, p.150).

CHART 10.

Taiwan's National Income at Current Prices Evolution from 1952 to 1985.

Year	National Income	Nominal Growth Rate (%)
1952	17.119,00	39,5
1955	29.326,00	18,5
1960	60.483,00	21
1965	108.626,00	10,3
1970	216.219,00	15,2
1975	538.409,00	5,9
1980	1.363.321,00	24,1
1985	2.327.221,00	5,5

GRAPHIC 20. *Taiwan's National Income at Current Prices from 1952 to 1985.*



Source: National Development Council, 2016

Elaborated by: Andrea P. Gómez Yánez

As a consequence, agriculture could contribute "to the growth of non-agricultural sectors by providing capital and labor" (Damodaran, 1969, p.74) to finance these new industries (Winters, 1996, p.2). In addition, it's possible to evidence a positive increase in the number of enterprises that contributed by the way to greater employment generation.

CHART 11.

Number of enterprises that contributed to employment generation in Taiwan.

Year	Number of Employees (%)						Total Number of Enterprises
	1 to 9	10 to 29	30 to 99	1 to 99	100 to 499	500+	
1954	90,73	6,87	1,84	99,44	0,5	0,07	42.288
1961	89,49	7,51	2,26	99,25	0,62	0,13	51.567
1966	72,11	13,45	11,66	97,22	2,31	0,47	27.709
1971	68,66	18,26	8,51	95,43	3,82	0,75	42.636
1976	68,12	18,02	9,11	95,26	4,1	0,64	69.517
1981	69,88	16,99	8,93	95,8	3,63	0,57	93.225
1986	63,6	21,92	10,5	96,03	3,54	0,43	113.639

Source: Chu, n.d.

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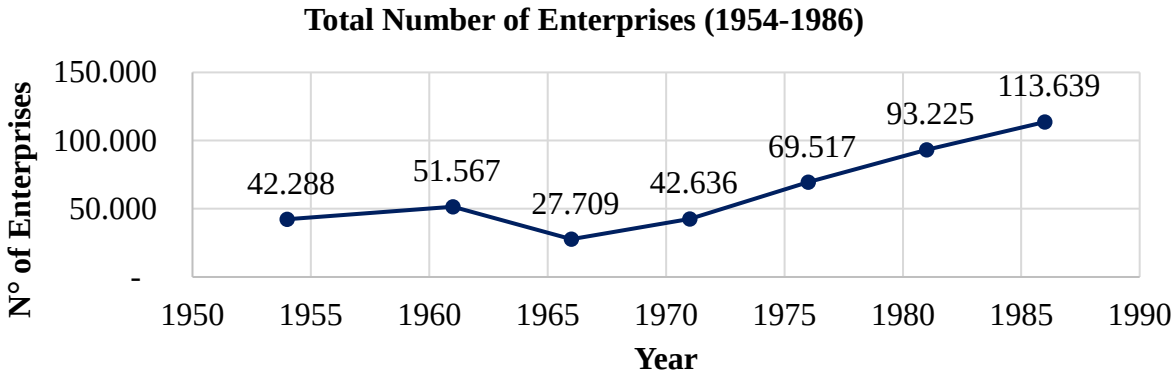
GRAPHIC 21.

Evolution in the number of enterprises that contributed to employment generation in Taiwan.



Source: Chu, n.d.

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2.2.3. Social effects of the policies applied by Taiwan to promote social inclusion in the period 1953-1983.

First of all, it's important to state that Taiwanese farmers used to be poor and used as tools of production (Ministry of Foreign Affairs, Republic of China (Taiwan), 1963, p.1). Therefore, the different policies and programs aimed at promoting social inclusion gave

opportunity to people from different ages to be productive, to contribute to the reconstruction of the country and to increase their incomes that tripled during 1949 and 1960 (Koo, 1966, p. 150) generating in this way "a more balanced industrial growth among regions and preventing the urban flight common in many industrializing countries" (Mao & Schive, 1995, p.53).

In terms of income distribution, between 1952 and 1972 real income was distributed in a more equal way as evidenced by a positive evolution regarding the Gini Index of Inequality of Income Distribution which evidenced a progressive decline in the period of 1953-1983.

CHART 12.

Taiwan's Gini Index of Inequality of Income Distribution in the period of 1953-1983.

Gini Index of Inequality of Income Distribution	
Year	**Gini Index**
1953	0,57
1965	0,322
1970	0,293
1976	0,289
1980	0,277
1983	0,287

Source: Scitovsky, 1985 & Fields, 1999

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This can be explained due to a greater increase in incomes as a consequence of land reforms that were implemented after World War II, which involved lower rents and government's policies that promoted labor-intensive industries accompanied by universal education, that not only stimulated agricultural productivity, but that also contributed to the reduction of inequality (Mao & Schive, 1995, p.54).

CHART 13.

Taiwan's Per Capita National Income at Current Prices in the period of 1953-1983 period.

Per Capita National Income at Current Prices				
Year	US$		NT$	
	Amount	Nominal Growth Rate (%)	Amount	Nominal Growth Rate (%)
1952	207,00	34,4	2.127,00	34,50
1955	210,00	14,1	3.270,00	14,20
1960	156,00	16,4	5.670,00	16,70
1965	217,00	6,9	8.682,00	7,00
1970	371,00	11,1	14.827,00	11,10
1975	881,00	3,9	33.493,00	4,00
1980	2.139,00	21,7	77.004,00	21,80
1985	3.042,00	3,4	121.263,00	4,00

Source: National Development Council, 2016

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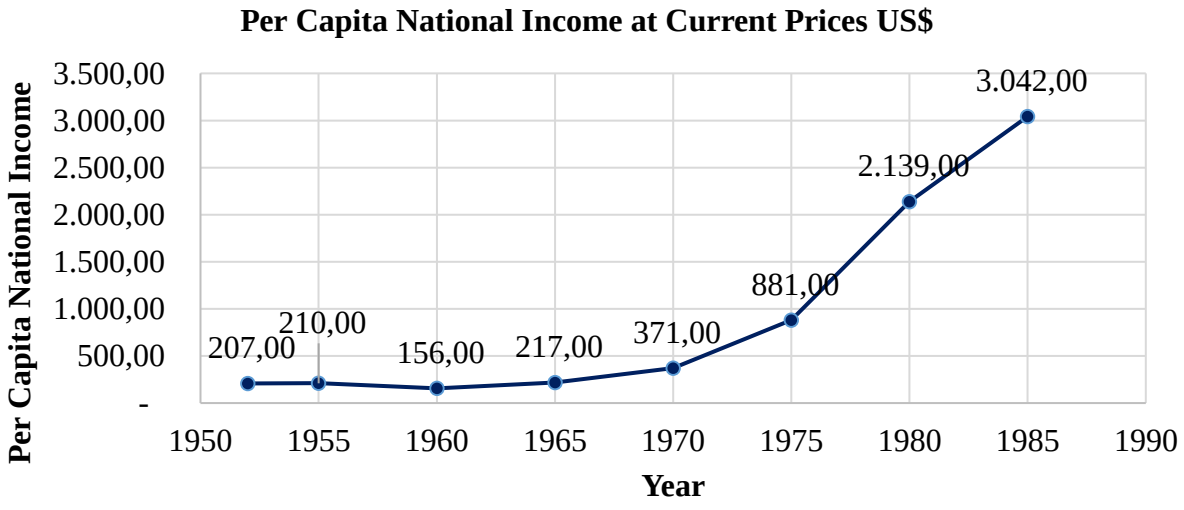
GRAPHIC 22.

Taiwan's Per Capita National Income at Current Prices in the period of 1953-1983.



Source: National Development Council, 2016

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Thus, there was a noticeable improvement in the living standard and social life of people in the rural areas that was manifested mainly in material advances, such as farms that have more modern furniture, “people that wear much finer clothes and that consume better foods” (Damodaran, 1969, p.75) as well as advances in rural electrification and the opportunity to participate in modern recreation. According to data, between 1976 and 1985 the increase in income led to an increase in the expenditure related to housing, utilities and other fuels; medical care and health expenses; transportation and communications; recreation, culture and education; and restaurants and hotels.

CHART 14.

Changes in Taiwan’s Household Expenditure.

Changes in Household Expenditure			
	Item	**1976**	**1985**
	Total	**100,00**	**100,00**
1	Food, beverages and tobacco	42,27	34,33
2	Clothing and footwear	7,20	5,92
3	Housing, utilities and other fuels	22,63	23,68
4	Furniture, home equipment, and home services	3,63	3,43
5	Medical care and health expenses	4,85	5,26
6	Transportation and communications	5,37	8,59
7	Recreation, culture and education	6,40	8,66
8	Restaurants and hotels	2,48	5,27
9	Others	5,16	4,86

Source: National Development Council, 2016

Elaborated by: Andrea P. Gómez Yánez

In addition, the increase of income was assigned to the education of children which became by the way a social aspiration in order to succeed (Damodaran, 1969, p.76-78).

2.3. Policies to promote savings and investment.

The implementation of policies that promoted industrialization and innovation, as mentioned in chapter I, "led to an early mobilization from the agricultural sector to a more labor-intensive and susceptible to labor-using technology" sector (Ash & Greene, 2017, p. 38), that allowed Taiwan to acquire the required domestic savings to support the industrialization process and to keep investing in human capital accumulation. This sub-chapter analyzes the main components and determinants of the policies that were implemented to promote savings and investment; and their economic and social impact in the period from 1953 to 1983.

2.3.1. Taiwan's policies to promote savings and investment in the period 1953-1983.

According to Ash & Greene (2007) an important element for the success of Taiwan as evidenced above, was the early mobilization of the agricultural sector that by means of its export orientation built on "non-traditional crops, which were more labor-intensive and susceptible to labor-using technology" (Ash & Greene, 2017, p. 38) led to acquire the required domestic savings to support the industrialization process and, following the Confucian ethic, to keep investing in human capital accumulation (Read, 2002, p.7-8). Thus, the main components of domestic saving have been, on the one hand, the private sector which provided the majority of domestic savings in the range of 65 to 70%, and on the other hand, the public sector (government and public enterprises), with a high government share (Gereffi & Wyman, 1990, p,73) that led to an impressive increase in national saving (Athukorala & Tsai, 2003, p.67), eliminating the need for foreign savings (Gereffi & Wyman, 1990, p,72) by replacing them with national savings (Torija-Zane, 2012, p.33).

In this regard, Taiwan was characterized for promoting household savings and for following a policy of high interest rates (Gereffi & Wyman, 1990, p.72) that resulted in capital accumulation and growth and that led "savers to found high interest rate so attractive

that they stopped putting their savings into unproductive but price-increasing hoards of goods and real estate" (Scitovsky, 1985, p. 225). In fact, this encouraged a more productive use and also the promotion of labor-intensive methods of production, making investment a more efficient and effective engine of growth (Scitovsky, 1985, p. 226-227). This was positive only when it resulted in a substitution rather than in an income effect. Moreover, other determinants of national savings were social security payments and retirement pension that with a smaller coverage changed "household's perceived lifetime incomes", encouraging in this way savings (Athukorala & Tsai, 2003, p.70).

Thereby, domestic savings allowed to finance high levels of investment (Read, 2002, p. 8) so that since 1980, public investment focused on the creation of infrastructure and in the expansion of heavy industries (Bekerman & Sirlin, 1997, p.488). On the other hand, in terms of foreign direct investment (FDI), being the United States (from 1951 to 1968) (Read, 2002, p.7) and Japan its major sources, it was also crucial for Taiwan's economic growth, because it facilitated technology transfers as well as funds for capital formation (Chang & Cheng, 1992, p.315-316). In this way, the objective was "to attract-export-oriented investment based upon the competitiveness of its highly educated and productive labor force" (Read, 2002, p.9) mainly to the electronic and the heavy industry (Bekerman & Sirlin, 1997, p.467).This was possible due to favorable government policies that attracted FDI, such as a national tax policy concerned in the stimulation of investment involving low corporate income tax rates and generous tax incentives (Chang & Cheng, 1992, p.315-316).

Thus, the State established 5 years of tax exemption to national or foreign companies that invest in new facilities or in expansions. Moreover, a list of incentives were created to strategic industries to which greater access conditions were imposed (Bekerman & Sirlin, 1997, p.487). In 1960, major tax incentive measures as for example tax holidays and a tax ceiling were introduced. In 1970 and 1980, investment tax credit and accelerated depreciation

were added (Chang & Cheng, 1992, p.315-316). However, inflows were subject to various restrictions mainly "the reserving of particular sectors of the domestic economy, including strategic heavy industries, public monopolies as well as banking and insurance" (Read, 2002, p.8-9).

Thus, the major tax incentives for firms in Taiwan were the following:

CHART 15. *Taiwan's major tax incentives.*

Type of Firm	Tax Incentive	Beginning Year and Later Revisions
Firms eligible for tax holidays	5-year exemption for new firms	**1960**
	4-year exemption for expansion firms	**1960 (5 years) 1971 (4 years)**
	May elect to adopt accelerated depreciation	**1971**
	May elect to defer commencement of tax holiday	**1977 (1-4 years) 1982 (2-4 years)**
Important productive enterprises	Tax ceiling	**1960 (18%); 1971 (22%); 1988 (20%)**
	All preferences enjoyed by general productive enterprises.	
General Productive enterprises	Tax ceiling	**1960 (18%); 1971 (25%); 1987 (20% for large trade and venture capital)**
	Accelerated depreciation for renovation of machinery and equipment	**1965 (1/3), 1981 (1/2)**
	Accelerated depreciation for R&D facilities	**1977**
	5-20% tax credit for machinery and equipment	**1981**
	20% tax credit for R&D expenses	**1984**
	All preferences enjoyed by profit seeking enterprises.	
General profit-seeking enterprises	2-year depreciation for pollution- control facilities	**1981**
	2-year depreciation for energy-saving facilities	**1981**

Source: Chang & Cheng, 1992

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2.3.2. Economic effects of the policies applied by Taiwan to promote savings and investment in the period 1953-1983.

Since 1960, the economic effect of these policies aimed at encouraging savings and investment was first of all economic growth that was explained due to an increase in the rates of investment and of savings (Bekerman y Sirlin, 1997, p.487), as well as the accumulation of capital (Scitovsky, 1985, p.225) and the growth of exports and imports that since 1970 reverted the negative effect of the trade balance (Bekerman y Sirlin, 1997, p.487) thus, contributing to Taiwan's trade surplus (Chang & Cheng, 1992, p.315).

CHART 16.

Taiwan: Savings and Investments Evolution (average values in percentages of GDP).

Period	INVESTMENT				SAVINGS		
	Total	**Private Sector**	**Public Employment**	**Government**	**Gross Domestic Savings**	**Net Domestic Savings**	**Gross External Savings**
1951-1954	14,7	8,0	5,0	1,7	14,2	8,9	0,5
1955-1959	16,7	7,5	7,0	2,2	14,3	8,0	2,3
1960-1964	18,4	11,2	5,1	2,1	18,1	11,4	0,3
1965-1969	23,8	14,7	6,7	2,4	22,6	15,9	1,2
1970-1974	31,3	19,3	9,1	2,9	31,6	24,1	-0,3
1975-1979	29,9	15,9	9,4	4,6	32,7	24,5	-2,8
1980-1984	25,4	13,7	7,7	3,9	31,2	22,7	-5,8

Source: Torija-Zane, 2012

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In terms of competition, high interest rates limited profits, restraining in this way the "rate at which the size of the individual enterprises grows" so that this type of firms used to stay small as a consequence of a very sluggish growth, which however helped to maintain competition and by the way, encouraged entrepreneurs to maintain efficiency and initiative to succeed. As a consequence, this fostered a more productive use of savings and also the promotion of labor-intensive methods of production, giving Taiwan an important advantage in relation to other countries (Scitovsky, 1985, p. 226-228). And as a result, Taiwan could

eliminate its dependence on foreign savings (Gereffi & Wyman, 1990, p, 72) by replacing them with national savings (Torija-Zane, 2012, p.33).

In terms of investment, since 1980 public investment focused on the creation of infrastructure and in the expansion of heavy industries which also contributed to the economic growth of the Island (Bekerman & Sirlin, 1997, p.488). In reference to FDI, its high export orientation not only provided Taiwan funds for capital formation, but also facilitated the transfer of technology and as mentioned above "alleviate the foreign exchanges shortages" by contributing to keep a positive balance of trade (Chang & Cheng, 1992, p.315).

2.3.3. Social effects of the policies applied by Taiwan to promote savings and investment in the period 1953-1983.

In terms of social effects, high interest rates as mentioned above "encouraged the use of labor-intensive methods of production" therefore, as a consequence this contributed to an increase in the employment of labor and to a reduction in unemployment keeping it, since 1970, below 3% (Scitovsky, 1985, p.226). It's worth mentioning that "the creation of employment was mostly through the private sector" (Lau, 2002, p.28). In addition, this led to a raise in wages (Scitovsky, 1985, p.226).

CHART 17. *Taiwan's Population and Employment Evolution.*

Population and Employment			
Year	**Labor Force (1000 persons)**	**Labor Participation Rate (%)**	**Unemployment Rate (%)**
1955	3.231,00	64,3	3,81
1960	3.617,00	62,4	3,98
1965	3.891,00	58,2	3,29
1970	4.654,00	57,4	1,7
1975	5.656,00	58,2	2,4
1980	6.629,00	58,3	1,23
1985	7.651,00	59,5	2,91

Source: National Development Council, 2016

Elaborated by: Andrea P. Gómez Yánez

CHART 18.

Evolution of employment by kind of activity in Taiwan (%).

Year	Agriculture	INDUSTRIES				SERVICES				Total
		Manufacturing	Construction	Utilities	Subtotal	Commerce	Transportation	Other	Subtotal	
1952	56,10	12,40	2,40	0,20	16,90	10,60	3,40	13,00	27,00	100
1956	53,20	13,20	2,80	0,30	18,30	10,00	4,10	14,40	28,50	100
1960	50,20	14,80	3,10	0,30	20,50	10,00	4,40	14,90	29,30	100
1964	49,50	15,40	3,30	0,40	21,30	9,60	4,60	15,00	29,20	100
1968	40,80	18,60	4,40	0,40	25,40	13,00	4,80	16,00	33,80	100
1972	33,00	24,60	5,60	0,40	31,80	14,00	5,20	16,00	35,20	100
1980	19,50	32,60	8,50	0,40	42,40	16,00	5,90	16,20	38,10	100
1988	13,70	34,50	7,30	0,40	42,60	19,00	5,30	19,40	43,70	100

Source: Mao & Schive, 1995

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Other positive impact was not only the creation of employment in the non-agricultural sector, but also investment in education that changed from nine to twelve years (Lau, 2002, p.28) and which resulted by the way in a higher education attainment.

CHART 19.

Net Government Expenditures in Education, Science & Culture (NT$ Million).

Net Government Expenditures in Education, Science & Culture (NT$ Million)		
Year	**Education, Science & Culture**	**%**
1955	892,00	13,9
1960	1.648,00	13,6
1965	2.794,00	12,5
1970	7.992,00	16,9
1975	20.741,00	16,8
1980	52.846,00	15,5
1985	111.522,00	20,4

Source: National Development Council, 2016

Elaborated by: Andrea Gómez

In this regard, government intervention was necessary to stimulate economic growth by fostering equality in income in order to prevent "rent seeking or the lobbying of interest groups while internalizing the coordination externality for the private sector" (Lu, 2008, p.4); as well as for having a highly educated workforce (Lu, 2008, p.3-4). Moreover, according to Deaton and Paxson (1994,1997) and Paxson (1996) there's a relation between savings rates and income growth that can be explained on the basis of the "life-cycle theory" which determines that "higher growth rates increase life-time wealth of younger savers relative to older dissavers" (Cited in Tsai, Cyrus, Chung, n.d., p.1).

Thus, according to specific objective number 2, it was possible to analyze the policies applied by Taiwan within the framework of its macroeconomic policy aimed at the development of export industries that contributed to its economic growth in 1953-1983, which stress the importance of the government's intervention in the promotion of industrialization, innovation, inclusion and saving, as key elements to cope a system of competition and the effects of exogenous shocks to which Taiwan, as a traditional society, has historically been exposed.

CHAPTER 3 COMPARATIVE ANALYSIS BETWEEN THE POLICIES APPLIED BY ECUADOR WITHIN THE FRAMEWORK OF THE NATIONAL STRATEGY FOR THE CHANGE OF THE ECUADORIAN PRODUCTIVE MATRIX (2015-2017) AND THOSE POLICIES APPLIED BY TAIWAN IN 1953-1983 AS A WAY TO FIND THE PATH TO ECONOMIC GROWTH

"Exploration is the engine that drives innovation. Innovation drives economic growth"

Edith Widder

3.1. Policies aimed to promote industrialization and innovation.

The effects of exogenous shocks as well as a system of competition that led Taiwan to adopt economic measures with regard to innovation, industrialization, inclusion, savings and investment, have demonstrated to be the same reasons that led Ecuador to propose a change in its productive matrix. Moreover, within an environment of very high uncertainty, dependence and hence, of vulnerability related to economic cycles, Taiwan's innovation policies played a significant role "in building favourable initial conditions" that were based on research and technology-diffusion activities (Ash & Greene, 2007, p.38-39). This seems to be the same path that Ecuador proposed as an alternative to cope economic vulnerability, and that will be analyzed by comparing and contrasting their approaches and means of implementation that have been geared towards research, development, productive transformation and diversification, as well as some differences in terms of policy implementation.

3.1.1. Ecuador's policies aimed to promote industrialization and innovation in the period 2015-2017.

In a general context, Ecuador has been characterized for having an undiversified economy, specialized in a single set of products lacking of added-value and that in the long-term can result in a risk for the further national growth (Guaipatin & Schwartz, 2014, p.15). This was reflected in an industrial sector that in 2015 represented 12,3% of the Gross Domestic Product (Ministerio Coordinador de Producción, Empleo y Competitividad & Ministerio de Industrias y Productividad, 2015-2016, p. 16). In addition, the high levels of poverty as well as of inequality that have been evident in its economy justify the need for an increased economic growth but by means of an inclusive trend involving quality jobs (Guaipatin & Schwartz, 2014, p.15-27) and a transition process "to move from being a traditional economy based on primary resources to a post-oil economy based on knowledge" (Vicepresidencia República del Ecuador, 2015, p.15). In this regard, the increase and improvement in national production oriented towards the diversification of goods and services is crucial not just for economic growth but also for its economy competitiveness (Vicepresidencia República del Ecuador, 2015, p.15), therefore it should be enhanced (Guaipatin & Schwartz, 2014, p.26-27).

Within the framework of the National Strategy for the Change of the Productive Matrix, one of the main axes has been the strengthening of the productive system on the basis of efficiency and innovation, understood as a change in the productive management that includes research and development for the promotion of entrepreneurship and therefore, for productive transformation and industrialization (Vicepresidencia República del Ecuador, 2015, p.11-60).

In this regard, this policy was oriented towards the productive diversification and reduction of Ecuador's dependence on a system of competition by developing strategic

industries such as refinery, shipyards, petrochemical, metallurgy and steel industries; as well as by establishing new productive activities such as mariculture, wood-based forest products, biofuels, among others. Moreover, it was also oriented on the one hand, to the implementation of added-value on existing production through technology and knowledge mainstreaming in the current production processes involving biotechnology, environmental services and renewable energy; and on the other hand, to the selective substitution of imports and to the promotion of exports of new products from new actors in order to diversify and expand the international destination of the Ecuadorian goods and services (SENPLADES, 2012, p.12).

In this way, the industrial policy elaborated by the Ministry of Industries and Productivity (2014) aimed at improving the productive structure of Ecuador, was based on:

1. The boost of productivity in the industry and value added mainstreaming, ensuring the maximization of the national component.
2. The promotion of the selective substitution of imports by ensuring a minimum scale of national production in industrial goods and their related services.
3. The boost of regularization, consolidation and strengthening of industrial businesses in the national territory.
4. The promotion of decent work in the national industry, prioritizing vulnerable groups.
5. The promotion of specialization and development of technical skills of the human talent of the industrial sector
6. The access to financing under favorable and timely conditions for the industry.
7. The implementation of better technologies in the industrial sector
8. The development of the basic industry and the promotion of the intermediate sector as the axis of diversification and generation of value added,
9. The revitalization of the consumption of the products of the Ecuadorian industry.

10. The strengthening of the national system of industrial quality as an element of systemic competitiveness.
11. The orientation of the industry to take advantage of opportunities in international markets.
12. The creation of proper conditions for the creation of enterprises in the industrial sector and the fulfillment of obligations with the State.
13. The generation of favorable conditions to increase investment in the national industry.
14. The promotion of associativity to create productive chains and improve the capacity of negotiation.
15. The promotion of public procurement of Ecuadorian industrial products
16. The development of the industrial logistical capacity to ensure the efficient management of local and exportable supply.

Hence, at the end, the purpose was to strategically substitute imports and boost exports at the forefront of an increasingly complex international economy in which the State becomes the responsible for the process of industrialization (Vicepresidencia República del Ecuador, 2015, p.11).

3.1.2. Similarities between Ecuador's policies aimed to promote industrialization and innovation in the period 2015-2017 and those applied by Taiwan in 1953-1983.

As it has been evidenced, the vulnerability to which Taiwan and Ecuador were exposed due to a system of competition and to exogenous shocks, was a consequence of the lack of industries and diversification. Therefore, this led both economies to adopt certain measures and strategies aimed at stimulating economic development and growth by means of industrialization and of a more integral insertion into the international division of labor (Odio, 2010, p. 2-3). One of those strategies in terms of innovation and industrialization was the

elaboration of a policy oriented towards the selective substitution of imports and to the export of new products that can foster the development of strategic industries.

In the case of Taiwan, the Island could realize that relying on agricultural exports wasn't an option for economic growth, and decided to develop heavy industries (Braaten, 2010, p.49-50) such as the "chemical industry, petrochemical intermediaries, and large-scale integrated production" (Braaten, 2010, p.52). In the case of Ecuador, considering the dynamics of the international system mainly of the international trade, the country realized that the specialization in a single set of products lacking of added-value was a long-term risk that could undermine economic growth by conditioning it as a raw material supplier (Guaipatin & Schwartz, 2014, p.15), and worsen the unequal exchange that has always existed due to the growing differential between the prices of raw materials, and that of products with higher added value and higher technology. Therefore, the role of the State as in the case of Taiwan, was crucial to launch an industrialization program aimed at the development of strategic industries such as refinery, shipyards, petrochemical, metallurgy and steel industries; as well as the establishment of new productive activities such as mariculture, wood-based forest products, biofuels, among others (SENPLADES, 2012, p.12). Hence it's worth mentioning that for both economies, R&D investment has been considered as an important factor to improve national production (Wang & Tsai, 2004, p.277).

In terms of institutions, in Taiwan the government created the Industrial Technology Research Institute (ITRI) that forged research in strategic areas and which resulted in the exportation of labor-intensive manufactured goods, contributing by the way to economic growth (Braaten, 2010, p.53). In Ecuador, the government created "La Ciudad del Conocimiento Yachay" that seeks to promote a knowledge-intensive economy (Yachay, n,d) and "Yachay Tech" a university with an academic program based on research and innovation (Yachay Tech, 2017).

In terms of incentives, it became for both economies an important axis in order to boost national production competitiveness in domestic as well as in foreign markets (Vicepresidencia de la República del Ecuador, 2015, p.53-56). In this way, it comprised the allocation of credit to strategic industries in the case of Taiwan, and to viable and profitable projects in the case of Ecuador "at below market interest rates for long term" (Noland, 2001, p.2).

Finally, the government of Taiwan and Ecuador provided subsidies through preferential loans, mainly for farmers with the aim of strengthening production (Yang, 1993, p.389; Ministerio de Agricultura y Ganadería, 2017).

3.1.3. Differences between Ecuador's policies aimed to promote industrialization and innovation in the period 2015-2017 and those applied by Taiwan in 1953-1983.

The first difference between Ecuador and Taiwan concerning the policies aimed at promoting industrialization and innovation beside the difference in periods, is the fact that in Taiwan "another way to subsidize industries was through technology and management assistance" where local firms were advised by six governmental consulting institution thanks to the coordination carried out by the Ministry of Economic Affairs (Yang, 1993, p.389). Whereas in Ecuador, industrialization and innovation even if the aim is the development of new industries as it was in Taiwan, it also seeks to encourage entrepreneurship, therefore, more than technology and management assistance, the government was concerned with the provision of preferential conditions, credit facilities, loans and incentives so that everyone could get involved in the productive system regardless of their physical capacities in order to set up productive enterprises.

Another difference is the approach, while in Taiwan its industrialization and innovation process was influenced mainly by capitalist economies such as that of Japan and then by the United States, which provided the Island of economic assistance, the transfer of

technology and management to generate economic growth (Jung & Tseng, 2013, p. 18-19). In Ecuador, this process was influenced by an ancestral cosmovision of life named "Sumak Kawsay" or "Buen Vivir" which promotes a different vision of the economy by seeking to strength social cohesion, community values and the active participation of individuals, as well as to promote equity with respect to diversity and to improve the quality of life of its inhabitants based on values (Plan Nacional del Buen Vivir, 2013-2017, p. 15).

3.2. Policies aimed to promote inclusion in both countries.

Social exclusion has been identified as a common feature between Taiwan and Ecuador. However, since their respective governments could realized the importance of human capital in the improvement of economic conditions to overcome global competitiveness by reaching higher levels of production, they adopted certain policies aimed at promoting inclusion mainly of those who have historically been excluded from politics, and that will be compared and contrasted in this sub-chapter.

3.2.1. Ecuador's policies aimed to promote inclusion in the period 2015-2017.

For the purpose of creating favorable conditions to improve economic competitiveness and to encourage a knowledge-based economy, the National Strategy for the Change of the Ecuadorian Productive Matrix considers a range of plural actors, such as big companies, small and medium enterprises, micro-enterprises, the actors of the popular and solidarity economy, and peasant producers as key elements for the productive transformation (Vicepresidencia de la República del Ecuador, 2015, p.12).

This approach is related to its 2008 Constitution which establishes that the national economic system is social, supportive, and integrated by three subsystems: the private, the public and the popular and solidarity subsystem. Thus, its main aim is the generation of the material and immaterial conditions for attaining the "Good Living" as well as for consolidating a balanced relationship between society, the State and the market. As a

consequence, this will lead to reach higher levels of production and social consumption, generate work throughout the life cycle, to promote a fairer access to production factors and contributing to the construction of popular power (SENPLADES, 2015).

In this regard, it's worth mentioning that according to article 341 of the Ecuadorian Constitution, it's established that the State is the one in charge of generating

> "the conditions for the comprehensive protection of their inhabitants throughout their lives, to ensure the rights and principles recognized in the Constitution, mainly equality in its diversity and non-discrimination, and will prioritize its action towards those groups that require special consideration due to the persistence of inequalities, exclusion, discrimination or violence, or by virtue of their age, health or disability status" (SENPLADES, 2013, p.112).

Hence, in compliance with article 341, and according to SENPLADES (2013), the State has established several strategic guidelines to promote social and economic inclusion, such as:

- The promotion and support to the economic initiatives of Micro, Small, and Medium Enterprise (MSMEs) through technical assistance mechanisms; economic circuits; agglomeration of family economies; alternative merchandising systems; the strengthening of negotiation capacity and access to financing, means of production, knowledge and skills, consistent with the territorial potentials.
- The provision of incentives for partnership, mainly for the regrouping of smallholdings, land acquisition and access to inputs and resources for the production to organizations of the popular and solidarity economy, taking into account the productive vocation of the territories.
- The development and implementation of training processes, vocational learning, professional and talent training, as well as other instruments to promote productive

and work skills in accordance with the expansion, the productive diversification of each territory and the desired national territorial model; recognizing the diversity and territorial complementarity, with cultural relevance, gender and intergenerational approaches.

- The development and the strengthening of the State's capabilities at all levels of government and civil society to create greater and better opportunities for the youth population.

3.2.2. Similarities between Ecuador's policies aimed to promote inclusion in the period 2015-2017 and Taiwan's inclusion policies applied in 1953-1983.

First of all, the approach of both, Ecuador and Taiwan, was to include people, mainly those who have historically been excluded from politics in order to improve their living conditions as well as to reach higher levels of production and social consumption.

In this regard, both governments addressed their efforts towards providing credits and incentives for farmers and the most vulnerable groups of society, giving them the opportunity to incorporate into the system from which they have been excluded. They developed and implemented vocational learning as well as other instruments to promote productive and work skills (SENPLADES, 2013). They also, channeled subsides and public investment (Looney, 2012, p.120).

Finally, they worked on the basis of programs that sought to make improvements in different areas affecting the living conditions of individuals such as education, health, welfare, among others. Throughout history this programs that also sought to spread the idea of community development, in Taiwan they acquired different names and adaptations, such as "The People's Livelihood Construction Campaign"; the 4-H Club; "Basic Livelihood Program; "Community Development Campaign"; while in Ecuador it remains as "Plan Nacional del Buen Vivir".

3.2.3. Differences between Ecuador's policies aimed to promote inclusion in the period 2015-2017 and those applied by Taiwan in 1953-1983.

The differences between Ecuador and Taiwan in terms of promoting inclusion are subtle. The main difference could rely on the range of actors that these economies sought to incorporate to the productive system as well as on the methods to include them. In the particular case of Taiwan, the policies promoted the development of projects that comprised irrigation, road building, production, village public housing, bathrooms, recreation facilities, green space and defense as a way to include people, with a particular emphasis on teachers and factory workers, farmers and people ranging from 18 to 50 years old. Then, with the 4-H Club, the government stimulate and include people aged from 12 years old so that they could learn by working (Ministry of Foreign Affairs, Republic of China (Taiwan), 1963, p.1).

In Ecuador the government of Rafael Correa also used to highlight the importance of those actors. But, in terms of the National Strategy for the Change of the Ecuadorian Productive Matrix, and hence on the basis an economy for the "Good Living", characterized for being social substantive and green, it considers a wider range of actors such as big companies, small and medium enterprises, micro-enterprises, the actors of the popular and solidarity economy, and peasant producers as key elements for the productive transformation (Vicepresidencia de la República del Ecuador, 2015, p.12).

3.3. Policies aimed to promote savings and investment.

In Ecuador during the research period, investment is considered as savings, because through it, the country is supposed to reduce its expenses and therefore save (Presidencia de la República del Ecuador, n.d.). Moreover, just like Taiwan, it is oriented towards providing support to the most vulnerable economic sectors as well as to strategic industries with the aim of replacing foreign savings through generating its own national financial resources. This

sub-chapter analyzes both economies by comparing and contrasting their approaches in terms of savings and investments.

3.3.1. Ecuador's policies aimed to promote savings and investment in the period 2015-2017.

In Ecuador, the increase in investment flows towards sectors that incorporate greater knowledge and technology has been crucial for the change of the productive matrix. Therefore, in terms of investment according to Vicepresidencia de la República del Ecuador (2015) the National Strategy for the Change of the Ecuadorian Productive Matrix proposes the following:

- The development of Special Zones of Economic Development (ZEDE) which should be aligned with the National Strategy for the Change of the Ecuadorian Productive Matrix.
- The establishment of industrial parks.
- The strengthening of an ecosystem of social innovation, which involves the institutional impulse to promote ventures and productive innovation; as well as public-private venture capital funds.
- The creation and implementation of technological disaggregation centers, which entails the implementation of local technology and the replacement of imported intermediate goods.
- To attract direct foreign investment, promote legal stability through contracts of investments, the reduction of income taxes, as well as other fiscal and economic incentives for new investments.
- The promotion of technological, industrial and agribusiness sector renewal, which comprises the application of energy efficiency index and greater generation of added value for access to credit for productive assets through public banking.

- The provision of goods, public services and the development of activities of collective interest.
- The execution of standard contracts for public-private co-participation that incorporate performance requirements such as the increase of the national added-value, the creation of jobs, local productive linkages, technology transfers, among others.

It's worth mentioning that public investment has been oriented towards the Ecuadorians capabilities and towards infrastructure, energy and basic services (Vicepresidencia de la República del Ecuador, 2015). Thus, within the context of this national strategy, investment is considered as savings, because through investment in different areas as mentioned above and in mega constructions such as the 8 hydroelectric power stations, the country was supposed to reduce its expenses and therefore save (Presidencia de la República del Ecuador, n.d.) by reducing imports, as for example those of polluting fossil fuels whose expected savings according to the ex-Coordination Minister for Economic Policy, Patricio Rivera (2016), were going to be about $700 million for the year 2016.

In this regard, public investments aimed "that more than 90% of the energy within the National Interconnected System to come from renewable sources, which represents a reduction of about 1,300 million dollars used in thermal energy consumption, a profitability of 39% (Poveda, 2016), the capacity to export clean energy to the countries of the region to generate financial resources (Instituto para el Ecodesarrollo Regional Amazónico, 2013), and above all, to generate productive employment and increase value added exports (Instituto para el Ecodesarrollo Regional Amazónico, 2013).

3.3.2. Similarities between Ecuador's policies aimed to promote savings and investment in the period 2015-2017 and those applied by Taiwan in 1953-1983.

First of all, both economies shared the same vision of replacing foreign savings by generating their own national financial resources (Gereffi & Wyman, 1990, p.72). In this regard, an ambitious plan of public works was developed. Thus, the investment of public sector played a crucial role in human capital accumulation, in the creation of infrastructure as well as in sectors offering the greatest potential benefits in terms of knowledge and technology, and in the expansion of heavy, capital-intensive industries, in order to reduce the external vulnerability that evidenced the oil crisis (Bekerman y Sirlin, 1997, p.487). Moreover, they emphasize the importance of promoting joint work between public and private sectors for the creation of national added value as well as of jobs, technology transfers, among others.

With respect to foreign direct investments, both economies applied a selective policy of incentives based on maximizing the transfer of technology towards national producers. In this way, the State took part in the negotiations of technology transfers and imposed strict requirements of national content to prevent the foreign direct investment to adopt an excessive enclave character (Bekerman y Sirlin, 1997, p.491). Thus, they established different fiscal and economic incentives directed towards new investments in strategic industries.

3.3.3. Differences between Ecuador's policies aimed to promote savings and investment in the period 2015-2017 and those applied by Taiwan in 1953-1983

Even if Taiwan and Ecuador shared the same vision concerning the need for industrializing and modernizing their economies in order to reduce their economic vulnerability, the paths they chose at least in terms of savings and investments weren't 100% the same. For example, in the case of Taiwan, the private sector provided the majority of

domestic savings in the range of 65 to 70% (Gereffi & Wyman, 1990, p.73). In addition, they followed a policy of high interest rates to promote household savings and therefore, to encourage a more productive use of investments (Scitovsky, 1985, p. 226-227). Furthermore, they reduced the coverage of social security payments and retirement pension to foster national savings.

While in Ecuador within the context of the National Strategy for the Change of the Ecuadorian Productive Matrix, the major difference is that national savings were encouraged mainly through investments evidenced in the mega constructions of the 8 hydroelectric power stations in an effort to reduce imports of polluting fossil fuels (Rivera, 2016), and foster exports of clean energy to the countries of the region in order to generate financial resources (Instituto para el Ecodesarrollo Regional Amazónico, 2013). Moreover, the government has prioritized the development of Special Zones of Economic Development (ZEDE), that didn't exist in Taiwan.

To sum up, investments are crucial for economic growth, however it's important to tailor this type of policies in accordance with current realities and contexts in order to avoid social crisis.

Finally, considering specific objective number 3, aimed at comparing the policies applied by Ecuador within the framework of the National Strategy for the Change of the Ecuadorian Productive Matrix (2015-2017) in relation to those policies applied by Taiwan in 1953-1983 as a way to find the path to economic growth, it was possible to identify several similarities in the approach of their policies geared towards research, productive transformation and diversification, as well as some differences with regard to their implementation, on the basis of an environment of very high uncertainty, dependence and hence, of vulnerability related to economic cycles.

VI. ANALYSIS

The overall objective of this dissertation was to analyze the influence of the macroeconomic policy of Taiwan aimed at the development of export industries (1953-1983) in the planning of the National Strategy for the Change of the Ecuadorian Productive Matrix in the period 2015-2017 from an economic growth perspective. Therefore, a comparative analysis was carried out to determine the differences as well as the similarities, first of all, between their economic conditions before the adoption of economic strategies, and later on, between the economic policies that were implemented to cope economic vulnerability, the effects of exogenous shocks and a system of competition.

According to it, in chapter 1, by means of economic indicators it was possible to determine a common fact between Ecuador and Taiwan, which was a condition of economic vulnerability evidenced by a GDP that in both cases placed them among poor market economies. This was a consequence of the subordination to a productive specialization based on a primary-export structure, meaning that raw materials were the main source of economic growth. Hence, when looking at Ecuador's experience, it's possible to determine that the drop in the prices of export commodities can have a negative impact on the economy as happened at the end of 2014 with oil. However, another condition that was noted this time with the example of Taiwan, is that agriculture can reach its limit when there's no more arable land. Thus, this reliance on primary goods affected the development of their economies by positioning them according to SENPLADES (2012) "in a situation of unequal exchange subject to the vagaries of the world market".

This condition of economic vulnerability was also evidenced by a demographic growth in Ecuador and Taiwan that remained higher than in developed countries whose demographic growth was very low, around 0,2% on average, representing a risk mainly because according to the Theory of population of Thomas Malthus (1998) when there's an

increase in population, there's a need for more resources and therefore an increase in the probabilities of famines, which can lead to an overexploitation of fields, to the destruction of forests, to emigration, and to a greater demand for social services, housing and jobs that may impoverish the country (Camarasa, 2010, p. 1).

Also, in terms of world income distribution both economies ranked among the last positions due to their dependence on international trade. In 1950, with a GDP Per Capita of $922.00 Taiwan ranked 38th out of 58 countries, and in 2014 with a GDP Per Capita of $6.286,425, Ecuador ranked 89th out of 187 countries, while in both periods the United States as a consequence of an industrialization process that was carried out between 1880 and 1929, ranked among the top positions.

Moreover, when looking at other areas such as industrialization, productivity, and individuals' living conditions, Taiwan was characterized by a predominant primary sector, while Ecuador's main economic activity was concentrated in the tertiary sector. So the secondary sector, which entails the transformation of raw materials for the production of goods wasn't at all a feature of these economies. In terms of individuals' living conditions, in Taiwan with 44,8 years in average for men and women, life expectancy remained below the worldwide average which was estimated around 63 years. Ecuador, on the other side, even if improvements have been made, its "2015 HDI of 0.739 demonstrated to be below the average of 0.746 for countries in the high human development group and below the average of 0.751 for countries in Latin America and the Caribbean" (UNDP, 2014, p.4). In addition, both economies, also evidenced its inability to produce goods at competitive prices, stagnating its capacity to generate an economic surplus and problems concerning income distribution which was demonstrated by their Gini cofficient. In 1953 Taiwan's Gini Coeffcient was estimated at 0,618; while in 2014 Ecuador's Gini Coefficient was estimated at 0,4665, being 0 perfect equality and 1 perfect inequality.

After explaining the facts that support economic vulnerability in Taiwan and Ecuador before the adoption of economic strategies, and mainly highlighting the subordination to a productive specialization based on a primary-export structure as a precondition that affected economic development and that led to an unequal exchange subject to the vagaries of the world market; according to the theory on the one hand, in the Modernization theory, Rostow, emphasized the importance of industrialization for the transition from traditional societies to modern societies which should involve changes in the mode of production and in the values of society that should be characterized by a greater propensity to save and invest and an open disposition to technological advancement, as the main ones.

On the other hand, in Latin American Classical Structuralism Theory, Raúl Prebisch, based on the unequal levels of development and unequal distribution of the gains from trade evidenced in Latin America (Briceño, Quintero & Ruiz, 2013, p.3) as a consequence of the development of an industrial sector of capital assets and of new technologies that increased the productivity possibilities of the center at the expense of the periphery (Kay, 1991, p. 4), also proposes industrialization as a solution for the development of peripheral countries (Odio, 2010, p. 2-3). Thus, in both theories, the State becomes responsible for the process of industrialization, meaning that it must carry out "changes in traditional tasks, the functioning of political institutions, the productivity of the private sector and the formulation and implementation of public policies in different areas" (Vargas, 2008, p. 114) to reduce the economic stagnation in these countries, and by the way to provide a better quality of life for all its inhabitants.

In this way, in chapter 2 and chapter 3, it's possible to see the involvement of the governments of Chiang Kai-Shek (Taiwan) and Rafael Correa (Ecuador) in the promotion of industrialization, innovation and inclusion to cope a system of competition and the effects of exogenous shocks to which traditional societies are exposed. For this, they implemented

certain policies geared towards research, productive transformation and diversification with similarities concerning their approach and some differences in terms of their implementation.

Among the similarities, we can highlight the following; a policy oriented towards the selective substitution of imports and to the export of new products, which was related to the development of strategic industries, being R&D investment in both cases considered as an important factor to improve national production. In terms of institutions, in Taiwan the government created the Industrial Technology Research Institute (ITRI), while in Ecuador, the government created "La Ciudad del Conocimiento Yachay". In terms of incentives, it became for both economies an important axis in order to boost national production competitiveness in domestic as well as in foreign markets. Furthermore, with the aim of strengthening production, both governments provided subsidies through preferential loans, mainly for farmers.

Their policies also promoted the inclusion of people, mainly those who have historically been excluded from politics as a way to improve their living conditions, as well as to reach higher levels of production and social consumption. This included credits, incentives, subsides and public investment channeled for the most vulnerable groups of society, giving them the opportunity to incorporate into the system from which they have been excluded.

Finally, both economies shared the same vision of replacing foreign savings by generating their own national financial resources (Gereffi & Wyman, 1990, p.72). For this, the investment of public sector played a crucial role in human capital accumulation, in the creation of infrastructure and in the expansion of heavy, capital-intensive industries to reduce external vulnerability. And, with respect to foreign direct investments, both economies applied a selective policy of incentives based on maximizing the transfer of technology towards national producers.

Among the differences, beside the difference in periods, we can highlight the following, in Taiwan another way to subsidize industries was through technology and management assistance (Yang, 1993, p.389). In Ecuador, entrepreneurship was encouraged mainly through preferential conditions, credit facilities, loans and incentives, not entirely through technology and management assistance. Another difference is the approach, while in Taiwan its industrialization and innovation process was influenced mainly by capitalist economies such as that of Japan and then by the United States; in Ecuador, this process was influenced by an ancestral cosmovision of life named “Sumak Kawsay” or “Buen Vivir”.

Finally, in terms of savings and investment, in Taiwan the private sector provided the majority of domestic savings in the range of 65 to 70% (Gereffi & Wyman, 1990, p.73). In addition, they followed a policy of high interest rates to promote household savings and therefore, to encourage a more productive use of investments and reduced the coverage of social security payments and retirement pension to foster national savings. In Ecuador, national savings were encouraged mainly through investments evidenced in the mega constructions of the 8 hydroelectric power stations, moreover the government prioritized the development of Special Zones of Economic Development (ZEDE), that didn’t exist in Taiwan.

VII. CONCLUSIONS

The work hypothesis for this investigation affirmed that: Within the framework of economic vulnerability, the macroeconomic policy of Taiwan aimed at the development of export industries in the period 1953-1983 influenced the planning of the Change of the Ecuadorian Productive Matrix as a national strategy to generate economic growth in the period 2015-2017. This has proven to be partially true mainly because there hasn't been found a direct influence of Taiwan in the planning of the Change of the Ecuadorian Productive Matrix, however the policies that both implemented shared similar approaches in terms of industrialization; the concluding remarks that support this results are the following:

- It has been identified that before the adoption of economic strategies, the common fact that led Taiwan and Ecuador to start a process of industrialization was a condition of economic vulnerability related to economic cycles and hence to a strong reliance on primary goods, evidenced by a GDP that in both cases placed them among poor market economies, as well as by an environment of very high uncertainty and dependence on international trade that provoked unequal exchange, inhibiting them from reaching a proper degree of development.
- Within the framework of the macroeconomic policy of Taiwan aimed at the development of export industries in the period 1953-1983, the innovation policies based on research and technology-diffusion activities were crucial not only for the recovery of its economy. This was the same path that Ecuador proposed as an alternative to cope economic vulnerability.
- As a consequence of the implementation of policies aimed at the development of export industries in the period 1953-1983, Taiwan experienced not only a positive recovery of its economy, but also a social recovery in terms of wealth distribution, poverty reduction, employment opportunities, inclusion, access to education,

communication and transportation facilities that prevented the urban flight common in many industrializing countries.

- In Taiwan and Ecuador, the process of industrialization was an initiative and hence led by their respective governments. In the case of Taiwan, since 1953 a set of measures aimed at promoting the development was implemented by Chiang Kai-Shek. In Ecuador, since 2015 the former president of the Republic of Ecuador, Rafael Correa Delgado, with the Change of the Ecuadorian Productive Matrix, emphasized the importance of changing the economy's production specialization pattern aimed at generating an added value and achieving the Ecuador of "Good Living".
- Finally, when analyzing and comparing both economic strategies, it has been possible to identify several similarities concerning their approaches which have been geared towards research, development, productive transformation and diversification, as some differences in terms of policy implementation.

VIII. RECOMMENDATIONS

After the analysis and with the findings listed above, the following recommendations can be made:

- In order to have a wider knowledge of the conditions that in comparison with Taiwan could lead to the recovery, to a greater dynamism of the economy, and therefore to a real transformation, it should be important to broaden the topic in terms of the strengths and weaknesses that Ecuador currently has to continue with this transformation as well as to face those changes that are required to change the economy's production specialization patterns.
- Considering that the process of transition from a traditional society to a modern-industrial society is long and can take generations and even centuries to be completed, it's important that the current and future governments of the Republic of Ecuador raise awareness of the importance of ending a long-term strong reliance on primary goods and on international trade, that have provoked unequal exchange, inhibiting the country from reaching a proper degree of economic development.
- Taking into account that the Ecuadorian economy is becoming increasingly dependent on public investment, which according to Prado (2010) is critical because public investment depends on oil prices and tax revenues, moreover, less private investment, less generation of wealth by companies, less tax collection and therefore less ability to maintain the pace of public investment can lead to an economic crisis, is therefore important to enhance joint work between the public and the private sector for the creation of national added value as well as of jobs, technology transfers, among others and thus, achieve increased targets of growth in national income.
- Considering the importance of technology in the transition to an industrial society it's recommended to improve education and foster investigation from early years to

higher education. This includes the improvement in the planning of “La Ciudad del Conocimiento Yachay”.

- Furthermore, it’s also important to enhance institutional planning in terms of programming, identification, appraisal, financing, implementation and evaluation, in order to avoid squandering and fungibility of resources.

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